

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

IGT, a Nevada corporation,

Plaintiff,

v.

BALLY GAMING  
INTERNATIONAL, INC., BALLY  
TECHNOLOGIES, INC., and BALLY  
GAMING, INC.,

Defendant.

CIVIL ACTION

No. 06-282 (KAJ)

**DECLARATION OF CHARLES A. THOMASIAN IN SUPPORT OF IGT'S  
OPPOSITION TO BALLY'S MOTION TO TRANSFER**

I, Charles A. Thomasian, hereby declare as follows:

1. I am an attorney in the law firm of O'Melveny & Myers, LLP, counsel for plaintiff IGT. I have personal knowledge of the facts set forth in this declaration and, if called upon as a witness, I could and would testify to such facts under oath.
2. Attached hereto as Exhibit 1 is a true and correct copy of excerpts of the Alliance Gaming Corp., Annual Report (Form 10-K) for the year ending June 30, 2005 (filed December 30, 2005).

3. Attached hereto as Exhibit 2 is a true and correct copy of a printout of a webpage labeled "Where to Play Playboy Slots," available at [http://www.ballytech.com/gameroom/where\\_to\\_play\\_list.asp?GameID=9](http://www.ballytech.com/gameroom/where_to_play_list.asp?GameID=9).

4. Attached hereto as Exhibit 3 is a true and correct copy of a printout of a Bally press release dated November 6, 2002, available at <http://phx.corporate-ir.net/phoenix.zhtml?c=81092&p=irol-newsArticle&ID=353504&highlight=delaware>.

5. Attached hereto as Exhibit 4 are a true and correct copies of the Federal Court Management Statistics (2005) reports for the United States District Courts for the Districts of Nevada and Delaware, obtained at <http://www.uscourts.gov/cgi-bin/cmsd2005.pl>.

6. Attached hereto as Exhibit 5 is a true and correct copy of the civil docket for *Bally Gaming Int'l et al. v. Alliance Gaming Corp. et al.*, No. 95-CV-00538-SLR, obtained from the PACER internet service.

7. Attached hereto as Exhibit 6 is a true and correct copy of the civil docket for *WMS Indus., Inc. v. Alliance Gaming Corp. et al.*, No. 95-CV-00586-SLR, obtained from the PACER internet service.

8. Attached hereto as Exhibit 7 is a true and correct copy of the civil docket for *Alliance Gaming Corp., et al. v. Bally Entertainment*, No. 95-CV-00716-MMS, obtained from the PACER internet service.

9. Attached hereto as Exhibit 8 is a true and correct copy of the civil docket for Case No. CA14367, in which Bally Gaming International, Inc. was a defendant, in the Chancery Court in New Castle County.

10. Attached hereto as Exhibit 9 is a true and correct copy of the civil docket for Case No. CA14440, in which Alliance Gaming Corporation sued Bally Gaming International, in the Chancery Court in New Castle County.

11. Attached hereto as Exhibit 10 is a true and correct copy of the civil docket for Case No. 02C-11-007, in which Alliance Gaming Corporation was a defendant, in Kent County Superior Court.

12. On December 7, 2004, IGT sued Bally Technologies, Inc. (then known as Alliance Gaming Corp.), Bally Gaming International, Inc., and Bally Gaming, Inc. for patent infringement in the United States District Court for the District of Nevada, Case No. 2:04-1676-RCJ-RJJ (the "Nevada Action"). A true and complete copy of the complaint in the Nevada Action is attached as Exhibit 11. The Nevada Action is pending before Judge Robert C. Jones. Plaintiff IGT's complaint in the Nevada Action includes the following allegations of patent infringement with respect to Defendants' iView touch screen display device:

31. Defendants have infringed and are currently infringing, inducing infringement of, and/or contributing to the infringement of one or more claims of [U.S. Patent No. 6,712,698], at a minimum, by making, using, selling, offering to sell, advertising, leasing, offering to lease, and/or marketing certain gaming machines, including but not limited to gaming machines featuring the "iVIEW" touch screen display device.

...  
36. Defendants have infringed and are currently infringing, inducing infringement of, and/or contributing to the infringement of one or more claims of [U.S. Patent No. 6,722,985], at a minimum, by making, using, selling, offering to sell, advertising, leasing, offering to lease, and/or marketing certain gaming machines, including but not limited to gaming machines featuring the "iVIEW" touch screen display device.

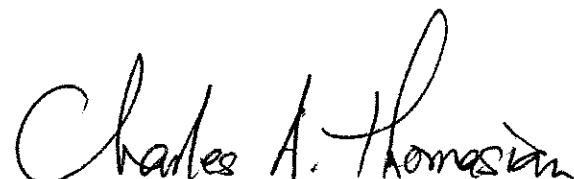
(Ex. 11. at ¶¶ 31 and 36.)

13. None of the patents-in-suit in the Nevada Action are at issue in this case. The six patents-in-suit in the Nevada Action are U.S. Patent No. 6,827,646 (the '646 patent); U.S.

Patent No. 5,848,932 (the '932 patent); U.S. Patent No. 5,788,573 (the '573 patent); U.S. Patent No. 5,722,891 (the '891 patent); U.S. Patent No. 6,712,698 (the '698 patent); U.S. Patent No. 6,722,985 (the '985 patent). True and complete copies of the six patents-in-suit are attached as Exhibits 12 - 17.

14. The Bally products accused of infringement in the Nevada Action are different from the Bally products accused of infringement in this action. In the Nevada Action, the accused products include Bally slot machines and Bally's iVIEW player tracking units. By contrast, in this action, the accused products are Bally's Power Bonusing software products, which are back-end products that allow casinos to determine how and when to award bonuses to players based on various criteria. While the bonusing software at issue here can be used in conjunction with the gaming devices and player tracking units at issue in the Nevada action in certain instances, they are separate, stand-alone products based on distinct technology.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct, and that this declaration was executed on June 22, 2006, in Los Angeles, California.



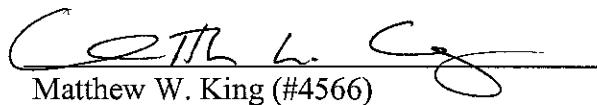
Charles A. Thomasian  
\_\_\_\_\_  
Charles A. Thomasian

**CERTIFICATE OF SERVICE**

I hereby certify that on May 26, 2006, I caused the foregoing document to be served on the following attorney of record in the manner and at the address indicated:

**BY HAND**

Jack B. Blumenthal, Esquire  
Karen Jacobs Louden, Esquire  
Morris, Nichols, Arsht & Tunnell  
1201 N. Market Street  
Wilmington, DE 19899



Matthew W. King (#4566)

**EXHIBIT A**

**ALLIANCE GAMING CORPORATION**  
**FORM 10-K**  
**Year Ended June 30, 2005**

*Gaming Operations*

Our Gaming Operations division offers three general types of games that are placed in casinos or other permissible gaming locations. The three general types of games are: those that are linked on a proprietary wide-area progressive system, those that operate on a proprietary near-area progressive system and those that are non-linked niche games, which are games that generally offer more complex features than traditional slot machines such as bonus rounds. These gaming machines earn recurring revenues and cash flows for us rather than being sold on a one-time basis. Rather than being sold, such games are often more profitable for us as a result of the recurring nature of the revenue, but they do require us to invest capital in the cost of manufacturing the gaming machines, purchasing signs and seating, and at times acquiring certain intellectual property rights.

**Wide-Area Progressive Systems:** We received regulatory approval from the Nevada Gaming Control Board of our wide-area progressive jackpot system named "Thrillions™" in November 1998. The Thrillions™ system was designed to allow patrons playing nickel, quarter and dollar machines to compete for the same progressive jackpot, with the odds of winning the jackpot being proportional to the amount wagered. We also operate separate wide-area progressives in Nevada, Mississippi and Native American lands, as well as through a separate third-party trust arrangement in Atlantic City, New Jersey. We utilize certain web-based technologies, such as virtual private networks to monitor wide-area progressives operating in non-domestic markets. We have a total of 1,660 units deployed on our wide-area progressive networks as of June 30, 2005.

We consolidate the revenues and expenses from certain wide-area progressive trusts in New Jersey due to the accounting rules for variable interest entities ("VIE's").

**Near-Area Progressive Systems:** As an alternative to wide-area games, we also offer customers the option of purchasing gaming devices and provide the customer with near-area progressive technology. This approach permits customers to create their own branded progressive links for which we also collect a daily fee. Currently, certain Harrah's Entertainment properties (formerly operated by Caesar's Entertainment) utilize the Thrillions™ system as a platform for their near-area progressive networks of linked games in the Nevada and Mississippi markets, as does Isle of Capri in Mississippi.

**Non-Linked Games:** We also offer a variety of non-linked daily fee games. These games have been marketed under such titles as Playboy (Playboy and Rabbit Head Design are marks of Playboy and used under license by Bally Gaming, Inc.), Monte Carlo™, Saturday Night Live™ and others, all of which are approved in most major gaming markets. We also earn recurring revenues from 798 devices deployed at horseracing facilities under agreements with the Delaware State Lottery Commission. As of June 30, 2005, we had a total installed base of daily fee games totaling 8,804 units.

Bally Gaming and Systems is also a provider of video lottery type terminal devices at race tracks in the state of New York. Through the competitive bidding process, Bally Gaming and SDG were each awarded approximately 25% of the initial terminals installed. The financial model for this market requires the manufacturer to build, deploy and maintain the terminals in return for a share of the net win generated by the terminals. The first games were installed at the Saratoga race track in January 2004, and have since been followed by installations at four additional tracks, totaling 2,953 games for the Company. Additional installations at Aqueduct and Yonkers may occur in the late spring or summer of 2006.

Additionally, we have a base of centrally determined games operating primarily in Washington, Florida, Alabama, and Oklahoma. With the exception of Oklahoma, these games generally have been sold to the customer, and we retain a daily fee for the central determination software license. Participation

**ALLIANCE GAMING CORPORATION**  
**FORM 10-K**  
**Year Ended June 30, 2005**

lease arrangements are still most prevalent in Oklahoma. As of June 30, 2005, the installed base for the centrally determined games totaled 18,885 units and full participation fee units for these markets total 3,100 units.

Gaming Operations generated revenues of approximately \$131.3 million, \$79.1 million and \$55.6 million for the years ended June 30, 2005, 2004 and 2003, respectively.

*Product Development*

We believe that providing games and systems with high entertainment value and that are preferred by the casino patron is key to meeting the demands of casinos. We believe that the use of technology is accelerating, and this trend could give newer gaming machines and systems that incorporate such technology a competitive advantage over older gaming machines and systems. Total spending on research and development by the Bally Gaming and Systems business unit was approximately \$43.4 million, \$36.6 million and \$20.0 million during the years ended June 30, 2005, 2004 and 2003, respectively. The increase in research and development spending for these years is a reflection of the competitive landscape and the need to continue to develop next generations of gaming product and systems.

We develop our products for both the domestic and international market. Our product development process for games includes both hardware and software. Major areas of hardware development include cabinet style, electronic capability, printer capability, and coin and currency handling. Hardware development efforts are focused on player appeal, product reliability and ease of maintenance. Development cycles for hardware can range from a few days for simple enhancements to more than a year for new electronics or new mechanical packages.

The software development process for new games, which includes graphics development, is continuous and requires significant allocations of human resources. Creativity in software development is an important element in product differentiation. Ideas for new models are generated internally and from customers and other third parties, many of whom have entered into strategic relationships with us.

All new or modified hardware and software are designed to satisfy all applicable testing standards. Typically, new products require regulatory approval for most North American jurisdictions. However, many jurisdictions outside North America do not require approval. For Nevada, new gaming machine platforms must be filed with the state gaming laboratory which tests the products for at least two to three months before a mandatory 30 to 60 day field test is conducted in a casino. The Nevada State Gaming Control Board and the Nevada Gaming Commission must each approve new product platforms at their monthly, public meetings. The process in Nevada for modifications of existing products or casino associated equipment is similar to that for new platforms, except a field test is usually not required and the Nevada State Gaming Control Board staff can approve the product administratively. Each jurisdiction that requires regulatory approval of new products has its own filing requirement and process. Once products are approved by the gaming regulators, customers may require a 30–90–day field trial of the product in their casinos with the right to return the product at any time during the field trial period. We do not recognize revenue until the customer ends the field trial and accepts the gaming machines.

Product development for casino enterprise systems also includes hardware and software. The major areas of hardware development include micro controller circuit board design and programming, as well as user interface devices such as card readers, keypads and displays. We have developed a modular and extendible hardware and software architecture, which focuses development on achieving greater functionality, product reliability, and ease of maintenance for the casino operator, and greater ease of use

**ALLIANCE GAMING CORPORATION**  
**FORM 10-K**  
**Year Ended June 30, 2005**

for the player. In addition, the architecture allows customers to upgrade existing components or add new components with minimal impact. Development cycles for hardware can vary between a few months for minor revisions to more than a year for major design changes or changes made by various slot machine manufacturers with which our products must be physically integrated. Software development results in periodic product releases that include new features that extend or enhance the casino enterprise systems; periodic maintenance releases that enable casino operators to correct problems or improve the usability of the system; and documentation needed to install and use the system.

We have developed a series of cashless and bonusing products marketed under the Bally Power Series name. The Bally Power products represent an integrated set of cashless and bonusing features to enhance the gaming experience of casino patrons. These products allow the transfer of funds using bar coded coupons and/or encrypted PIN numbers to download either restricted or unrestricted credits to the gaming device. These products allow casino operators to reduce cash and coin handling expenses and minimize overall operating expenditures and provide creative marketing incentives to their casino patrons. Our cashless products are in use in Nevada, Michigan, New Jersey, Mississippi, Louisiana, Iowa, Colorado, Missouri, Indiana and various Native American and international jurisdictions encompassing many states and countries.

The software development process for our systems includes the design and development of features to meet various regulatory standards. The regulatory standards vary by jurisdiction forcing us to develop multiple software settings based on the individual state and tribal gaming standards, and each jurisdiction can require the approval of any software modifications or new products prior to deploying at casino locations. The approval processes can vary significantly by jurisdiction, based on the software changes developed, technology enhancements, and regulator resources.

*Product Markets*

We believe that the domestic installed base of traditional Class III gaming devices now exceeds 725,000 units. Nevada has the largest installed base, totaling approximately 200,000 units as of June 30, 2005.

The gaming industry continues to expand in international markets. Our primary international markets are Europe, Canada, Latin America and, to a lesser extent, the Far East and the Caribbean. We conduct our business in Canada through our staff based in the United States. We also distribute gaming machines, manufactured by Bally Gaming, through direct and indirect subsidiaries: Bally Gaming UK, from our sales office in Wigan, England principally to customers in Europe and Russia; Bally Gaming de Puerto Rico, Inc., principally to customers in Puerto Rico; and Bally Gaming and Systems, SA, in Montevideo, Uruguay and its branches in Peru and Argentina, principally to customers in South America.

Presently, Class II gaming devices are marketed to certain Native American gaming markets. We believe the domestic installed base of Class II gaming devices is approximately 31,000 units.

The primary markets for casino enterprise systems are the United States and, to a lesser extent, Canada, Latin America, Europe and the Caribbean. Markets for systems within the United States include traditional land-based casinos concentrated in Nevada, Atlantic City, New Jersey, Native American casinos and riverboats and dockside casinos. Our domestic market for casino enterprise systems is new casinos and existing or new customers who either acquire casinos with a competitor's system which we replace with our system, or expand their casino floors or upgrade their hardware or software to a new product release. Unlike the United States market, where most jurisdictions require the implementation of systems, few

**ALLIANCE GAMING CORPORATION**  
**FORM 10-K**  
**Year Ended June 30, 2005**

|  | Fiscal Year Ended June 30. |                  |                  |                  |                  |
|--|----------------------------|------------------|------------------|------------------|------------------|
|  | 2005                       | 2004             | 2003             | 2002             | 2001             |
|  | As restated(1)             | As restated(1)   | As restated(1)   | As restated(1)   | As restated(1)   |
| Statement of Operations Data:  |                            |                  |                  |                  |                  |
| Total revenues from continuing operations  | \$484,030                  | \$480,408        | \$363,212        | \$273,415        | \$214,098        |
| Operating income (loss)(2)   | (5,722)                    | 92,137           | 71,664           | 50,017           | 29,449           |
| Income (loss) from continuing operations before income taxes and minority interest | (22,582)                   | 63,569           | 46,637           | 23,403           | (5,462)          |
| Income tax expense (benefit)   | (6,510)                    | 21,513           | 16,516           | (39,256)         | (1,313)          |
| Minority interest  | (4,245)                    | (2,309)          | (2,009)          | (1,935)          | (2,165)          |
| Income (loss) from continuing operations   | (20,317)                   | 39,747           | 28,112           | 60,724           | (6,314)          |
| Income (loss) from discontinued operations(3)                                      | (4,654)                    | 40,889           | (17,638)         | 1,612            | 20,796           |
| Net income (loss)  | <u>\$ (24,971)</u>         | <u>\$ 80,636</u> | <u>\$ 10,474</u> | <u>\$ 62,336</u> | <u>\$ 14,482</u> |
| Basic earning (loss) per share:  |                            |                  |                  |                  |                  |
| Continuing operations  | \$ (0.40)                  | \$ 0.79          | \$ 0.57          | \$ 1.31          | \$ (0.14)        |
| Discontinued operations  | (0.09)                     | 0.82             | (0.36)           | 0.04             | 0.49             |
| Total  | <u>\$ (0.49)</u>           | <u>\$ 1.61</u>   | <u>\$ 0.21</u>   | <u>\$ 1.35</u>   | <u>\$ 0.35</u>   |
| Diluted earning (loss) per share:  |                            |                  |                  |                  |                  |
| Continuing operations  | \$ (0.40)                  | \$ 0.78          | \$ 0.56          | \$ 1.28          | \$ (0.14)        |
| Discontinued operations  | (0.09)                     | 0.80             | (0.36)           | 0.04             | 0.48             |
| Total  | <u>\$ (0.49)</u>           | <u>\$ 1.58</u>   | <u>\$ 0.20</u>   | <u>\$ 1.32</u>   | <u>\$ 0.34</u>   |

|  | As of June 30, |                |                |                |                |
|--|----------------|----------------|----------------|----------------|----------------|
|  | 2005           | 2004           | 2003           | 2002           | 2001           |
|  | As restated(1) |
| Balance Sheet Data:                                |                |                |                |                |                |
| Cash and cash equivalents                          | \$ 33,170      | \$ 154,258     | \$ 24,406      | \$ 24,700      | \$ 27,029      |
| Restricted cash                                    | 13,421         | 15,590         | 14,478         | 7,100          | 2,100          |
| Working capital                                    | 129,293        | 262,883        | 139,938        | 99,459         | 53,297         |
| Total assets                                       | 648,094        | 768,431        | 538,456        | 461,424        | 371,017        |
| Total long term debt, including current maturities | 335,117        | 428,955        | 345,215        | 341,793        | 339,540        |
| Total stockholders' equity (deficiency)            | 178,937        | 186,363        | 81,068         | 44,473         | (39,205)       |

(1) See Note 2 to the Consolidated Financial Statements, Restatement of Previously Issued Financial Statements.

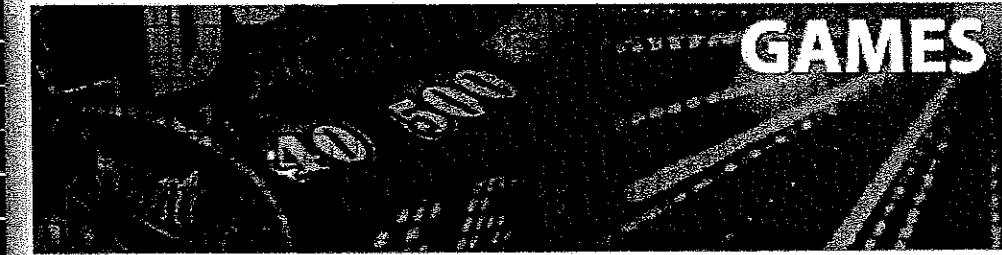
(2) The Company has recorded the following significant items effecting comparability of operating income (loss):

- During the fiscal year ended June 30, 2005, we recorded severance charges totaling \$3.7 million (see Note 16 to the consolidated financial statements, Severance Charges), certain impairment charges

**EXHIBIT B**



[GAMES](#)  
[SYSTEMS](#)  
[NEWS & EVENTS](#)  
[CUSTOMER CENTER](#)  
[PLAYER CENTER](#)  
[CONTACT](#)



## WHERE TO PLAY



### Nevada Link

#### Las Vegas Region

- Aladdin Hotel & Casino
- Barcelona Hotel & Casino
- Fitzgeralds Casino & Hotel
- Flamingo Hilton
- Four Queens Hotel & Casino
- Harrahs Las Vegas
- Imperial Palace
- Las Vegas Club
- Mandalay Bay Resort & Casino
- MGM Grand
- New Frontier Hotel & Casino
- Poker Palace Casino
- Slots-A-Fun Casino
- The Luxor
- The Mirage
- The Palms
- Treasure Island
- Tropicana Resort & Casino

#### Reno/Sparks/Lake Tahoe Region

- Bonanza Casino, Reno
- Boomtown, Reno
- Fitzgeralds Hotel Casino - Reno, NV
- Golden Phoenix Casino, Reno
- Harrahs Casino - Reno, NV
- Harveys Lake Tahoe, Stateline
- Lake Tahoe Horizon Casino Resort, Stateline

#### Laughlin/Mesquite/Pahrump Region

- Avi Resort & Casino, Laughlin
- Edgewater Hotel Casino, Laughlin
- Oasis Resort, Mesquite
- Pioneer Hotel, Laughlin
- River Palms Resort Casino, Laughlin
- Virgin River Hotel & Casino, Mesquite

### New Jersey Link

#### Atlantic City Region

- Bally's Park Place
- Borgata
- Mohegan Sun Casino, Uncasville, CT
- Resorts International
- Tropicana
- Trump Marina Hotel & Casino
- Trump Plaza
- Trump Taj Mahal

#### California Link

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- Black Oak Casino, Tuolumne
- Cache Creek Indian Casino, Brooks
- Colusa Casino, Colusa
- Eagle Mountain Casino, Porterville
- Feather Falls Casino, Oroville
- Pechanga Resort & Casino, Temecula
- River Rock Casino, Geyserville
- Sycuan Casino & Resort, El Cajon
- Trump 29 Casino, Coachella
- Viejas Casino, Alpine

#### Canada Link

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##### **Canada Region**

- Casino Rama, Ontario
- Casino Windsor, Ontario
- Niagara Fallsview Casino, Ontario

#### Mississippi Link

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##### **Mississippi Region**

- Beau Rivage, Biloxi
- Boomtown Casino, Biloxi
- Casino Magic Biloxi
- Fitzgeralds Casino Hotel - Tunica
- Gold Strike Hotel Casino, Robinsonville
- Grand Casino - Biloxi
- Grand Casino - Gulfport
- Harrah's Tunica Casino and Hotel

#### Mid West Link

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##### **Colorado Casino Locations Region**

- Gold Rush Casino, Cripple Creek
- Mardi Gras Casino, Black Hawk

##### **Illinois Casino Locations Region**

- Grand Victoria - Elgin Riverboat Resort, Elgin

##### **Indiana Casino Locations Region**

- Trump Casino Indiana, Gary

##### **Iowa Casino Locations Region**

- Harrah's Council Bluffs
- Harvey's Bluffs Run Casino, Council Bluffs
- Lakeside Casino Resort, Osceola
- Prairie Meadows Racetrack and Casino, Altoona
- WinnaVegas Casino, Sloan

##### **Louisiana Casino Locations Region**

- Casino Rouge, Baton Rouge
- Harrah's Louisiana Downs, Bossier City

- Isle Of Capri - Lake Charles, Westlake

**Michigan Casino Locations Region**

- Chip In's Island Resort & Casino, Harris
- Turtle Creek Casino, Williamsburg

**Minnesota Casino Locations Region**

- Mystic Lake Casino Hotel, Prior Lake

**Missouri Casino Locations Region**

- Argosy Casino - Kansas City
- Harrah's North Kansas City Casino
- Harrah's St. Louis Casino & Hotel, Maryland Heights
- St. Jo Frontier Casino, St. Joseph

**South West Link**

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**Arizona Casino Locations Region**

- Cocopah Bingo & Casino, Somerton
- Gila River Casino, Chandler

**New Mexico Casino Locations Region**

- Big Rock Casino, Espanola
- Camel Rock Casino, Santa Fe
- Oh Kay Casino , San Juan Pueblo
- San Felipe's Casino Hollywood, San Felipe
- Sandia Casino, Albuquerque
- Santa Ana Star Casino, Bernalillo

**Delaware Link**

- 
- Delaware Park Racetrack & Slots, Wilmington
  - Dover Downs, Dover
  - Midway Slots and Simulcast, Harrington

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**EXHIBIT C**


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## PRESS RELEASE

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### Alliance Gaming Signs Contract to Provide Full Systems Solution At Delaware Park Racetrack & Slots

LAS VEGAS, Nov. 6 /PRNewswire-FirstCall/ — Alliance Gaming Corp. (Nasdaq: ALLY) announced today that its Bally Gaming and Systems business unit has signed a contract with the Delaware Racing Association to provide Delaware Park Racetrack & Slots with a new full systems solution that includes a revolutionary player tracking component that compiles information from both slot machine and horse racing wagers.

Preliminary work on displacing the current system at Delaware Park will begin in the coming weeks and full implementation on the 2,000 slot machines will be completed in the first calendar quarter of 2003. By combining the strengths of the Bally Systems and Casino Marketplace product lines, Delaware Park will feature the SDS(R) slot accounting system in a "racino" environment for the first time.

Delaware Park is the leader in the racino industry in terms of gross revenue and win per unit, averaging more than \$375 per machine per day in 2002, and currently maintains approximately 50 percent of the Delaware State market share.

Casino Marketplace's player tracking capability will allow the system to interface to the horse track's tote system to capture the latest real-time data about race wagering and results. The data will then be posted directly into the player's profile that has consolidated information from both slot machine and horse racing wagers.

Recognized as the industry leader with approximately 217,000 game monitoring units and 187 casino customers worldwide, the Bally Systems product line offers slot machine cash monitoring, accounting, security, maintenance, marketing, promotional and bonus capabilities, enabling operators to accurately analyze performance and accountability while providing an enhanced level of customer service.

Alliance Gaming is a diversified gaming company with headquarters in Las Vegas. The Company is engaged in the design, manufacture, operation and distribution of advanced gaming devices and systems worldwide, and is the nation's largest gaming machine route operator and operates two casinos. Additional information about the Company can be found at [www.ally.com](http://www.ally.com).

This news release may contain "forward-looking" statements within the meaning of the Securities Act of 1933, as amended, and is subject to the safe harbor created thereby. Such information involves important risks and uncertainties that could significantly affect the results in the future and, accordingly, such results may differ from those expressed in any forward-looking statements. Future operating results may be adversely affected as a result of a number of risks that are detailed from time to time in the company's filings with the Securities and Exchange Commission.

Investor and Media Contact: Robert Saxton

Alliance Gaming Corporation  
(702) 270-7600

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**EXHIBIT D**

## U.S. DISTRICT COURT - JUDICIAL CASELOAD PROFILE

12-MONTH PERIOD ENDING  
 SEPTEMBER 30

|                                   |  | NEVADA                             |       |       |       |       |       | Numerical Standing | U.S. | Circuit |
|-----------------------------------|--|------------------------------------|-------|-------|-------|-------|-------|--------------------|------|---------|
|                                   |  | 2005                               | 2004  | 2003  | 2002  | 2001  | 2000  |                    |      |         |
| OVERALL<br>CASELOAD<br>STATISTICS | Filings*   | 3,213                              | 3,387 | 3,312 | 3,257 | 2,825 | 2,837 |                    |      |         |
|                                   | Terminations                                       | 3,115                              | 3,252 | 3,219 | 3,110 | 2,693 | 2,874 |                    |      |         |
|                                   | Pending  | 3,226                              | 3,177 | 3,074 | 3,076 | 2,963 | 2,954 |                    |      |         |
|                                   | % Change in Total Filings                          | Over Last Year                     |       | -5.1  |       |       |       | 55                 |      | 7       |
|                                   |  | Over Earlier Years                 |       | -3.0  | -1.4  | 13.7  | 13.3  | 26                 |      | 6       |
| Number of Judgeships              |  | 7                                  | 7     | 7     | 7     | 7     | 6     |                    |      |         |
| Vacant Judgeship Months**         |  | 6.0                                | .0    | .0    | 6.0   | 21.5  | 15.4  |                    |      |         |
| ACTIONS<br>PER<br>JUDGESHIP       | Filings  | Total                              | 459   | 483   | 473   | 466   | 404   | 473                | 40   | 7       |
|                                   |  | Civil                              | 344   | 365   | 355   | 343   | 329   | 392                | 45   | 7       |
|                                   |  | Criminal Felony                    | 85    | 91    | 97    | 101   | 75    | 81                 | 35   | 9       |
|                                   |  | Supervised Release Hearings**      | 30    | 27    | 21    | 22    | -     | -                  | 25   | 9       |
|                                   | Pending Cases                                      |                                    | 461   | 454   | 439   | 439   | 423   | 492                | 28   | 7       |
|                                   | Weighted Filings**                                 |                                    | 490   | 560   | 537   | 513   | 449   | 519                | 36   | 7       |
|                                   | Terminations                                       |                                    | 445   | 465   | 460   | 444   | 385   | 479                | 48   | 8       |
|                                   | Trials Completed                                   |                                    | 13    | 16    | 17    | 17    | 17    | 18                 | 75   | 9       |
| MEDIAN<br>TIMES<br>(months)       | From Filing to Disposition                         | Criminal Felony                    | 10.4  | 8.6   | 8.0   | 9.3   | 10.0  | 9.9                | 69   | 13      |
|                                   |  | Civil**                            | 8.9   | 7.7   | 8.1   | 8.6   | 10.6  | 8.1                | 28   | 4       |
|                                   | From Filing to Trial** (Civil Only)                |                                    | 27.0  | 28.0  | 32.0  | 31.0  | 33.0  | 28.0               | 59   | 5       |
| OTHER                             | Civil Cases Over 3 Years Old**                     | Number                             | 113   | 137   | 109   | 112   | 81    | 87                 |      |         |
|                                   |  | Percentage                         | 4.5   | 5.4   | 4.4   | 4.5   | 3.3   | 3.5                | 37   | 2       |
|                                   | Average Number of Felony Defendants Filed Per Case |                                    | 1.3   | 1.4   | 1.2   | 1.2   | 1.3   | 1.3                |      |         |
|                                   | Jury Selection                                     | Avg. Present for Jury Selection    | 49.49 | 41.16 | 41.09 | 43.03 | 39.05 | 42.36              |      |         |
|                                   |  | Percent Not Selected or Challenged | 32.6  | 33.8  | 29.9  | 36.8  | 40.1  | 38.5               |      |         |

### 2005 CIVIL AND CRIMINAL FELONY FILINGS BY NATURE OF SUIT AND OFFENSE

| Type of   | TOTAL | A  | B   | C   | D   | E  | F   | G   | H   | I   | J   | K  | L   |
|-----------|-------|----|-----|-----|-----|----|-----|-----|-----|-----|-----|----|-----|
| Civil     | 2410  | 24 | 106 | 697 | 64  | 28 | 116 | 330 | 130 | 156 | 419 | 11 | 329 |
| Criminal* | 580   | -  | 123 | 106 | 122 | 84 | 41  | 27  | 8   | 12  | 34  | 3  | 20  |

\* Filings in the "Overall Caseload Statistics" section include criminal transfers, while filings "By Nature of Offense" do not.

\*\* See "Explanation of Selected Terms."

## U.S. DISTRICT COURT - JUDICIAL CASELOAD PROFILE

**12-MONTH PERIOD ENDING  
SEPTEMBER 30**

|                                   |  | DELAWARE                           |       |       |       |       |       | Numerical Standing |         |
|-----------------------------------|--|------------------------------------|-------|-------|-------|-------|-------|--------------------|---------|
|                                   |  | 2005                               | 2004  | 2003  | 2002  | 2001  | 2000  |                    |         |
| OVERALL<br>CASELOAD<br>STATISTICS | Filings*   | 1,190                              | 1,797 | 1,362 | 2,028 | 1,004 | 1,303 | U.S.               | Circuit |
|                                   | Terminations                                       | 1,448                              | 1,516 | 1,507 | 1,478 | 1,020 | 955   |                    |         |
|                                   | Pending  | 1,853                              | 2,085 | 1,836 | 1,999 | 1,477 | 1,502 |                    |         |
|                                   | % Change in Total Filings                          | Over Last Year                     |       | -33.8 |       |       |       | 91                 | 6       |
|                                   |  | Over Earlier Years                 |       | -12.6 | -41.3 | 18.5  | -8.7  | 70                 | 5       |
| Number of Judgeships              |  | 4                                  | 4     | 4     | 4     | 4     | 4     |                    |         |
| Vacant Judgeship Months**         |  | .0                                 | .0    | 1.9   | 3.1   | .0    | .0    |                    |         |
| ACTIONS<br>PER<br>JUDGESHIP       | FILINGS  | Total                              | 298   | 449   | 340   | 507   | 251   | 326                | 81      |
|                                   |  | Civil                              | 264   | 414   | 306   | 462   | 233   | 307                | 70      |
|                                   |  | Criminal Felony                    | 28    | 29    | 25    | 38    | 18    | 19                 | 91      |
|                                   |  | Supervised Release Hearings**      | 6     | 6     | 9     | 7     | -     | -                  | 88      |
|                                   | Pending Cases                                      |                                    | 463   | 521   | 459   | 500   | 369   | 376                | 26      |
| Weighted Filings**                |  |                                    | 422   | 534   | 424   | 516   | 379   | 389                | 59      |
| Terminations                      |  |                                    | 362   | 379   | 377   | 370   | 255   | 239                | 71      |
| Trials Completed                  |  |                                    | 20    | 19    | 23    | 18    | 16    | 19                 | 44      |
| MEDIAN<br>TIMES<br>(months)       | From Filing to Disposition                         | Criminal Felony                    | 9.4   | 9.1   | 8.3   | 9.8   | 8.0   | 6.6                | 58      |
|                                   |  | Civil**                            | 10.9  | 14.0  | 11.2  | 8.2   | 12.6  | 10.9               | 68      |
|                                   | From Filing to Trial** (Civil Only)                |                                    | 23.5  | 26.0  | 24.0  | 22.5  | 21.0  | 24.0               | 47      |
| OTHER                             | Civil Cases Over 3 Years Old**                     | Number                             | 156   | 65    | 66    | 99    | 77    | 70                 |         |
|                                   |  | Percentage                         | 9.1   | 3.4   | 3.9   | 5.4   | 5.5   | 4.9                | 77      |
|                                   | Average Number of Felony Defendants Filed Per Case |                                    | 1.2   | 1.2   | 1.3   | 1.1   | 1.3   | 1.2                |         |
|                                   | Jurors   | Avg. Present for Jury Selection    | 39.82 | 38.50 | 34.98 | 33.84 | 32.68 | 35.75              |         |
|                                   |  | Percent Not Selected or Challenged | 22.8  | 20.9  | 24.0  | 24.4  | 19.9  | 28.5               |         |

### 2005 CIVIL AND CRIMINAL FELONY FILINGS BY NATURE OF SUIT AND OFFENSE

| Type of   | TOTAL | A  | B  | C   | D  | E  | F  | G  | H  | I   | J   | K  | L   |
|-----------|-------|----|----|-----|----|----|----|----|----|-----|-----|----|-----|
| Civil     | 1055  | 28 | 5  | 252 | 7  | 3  | 36 | 92 | 50 | 149 | 149 | 63 | 221 |
| Criminal* | 110   | 1  | 27 | 16  | 23 | 20 | 6  | ** | 5  | 4   | -   | 6  | 2   |

\* Filings in the "Overall Caseload Statistics" section include criminal transfers, while filings "By Nature of Offense" do not.

\*\* See "Explanation of Selected Terms."

**EXHIBIT E**

CLOSED

**U.S. District Court  
District of Delaware (Wilmington)  
CIVIL DOCKET FOR CASE #: 1:95-cv-00538-SLR**

Bally Gaming Int'l, et al v. Alliance Gaming Corp, et al  
Assigned to: Honorable Sue L. Robinson  
Demand: \$0  
Cause: 28:1331 Fed. Question: Securities Violation

Date Filed: 09/05/1995  
Jury Demand: None  
Nature of Suit: 850  
Securities/Commodities  
Jurisdiction: Federal Question

**Plaintiff**

**Bally Gaming International, Inc.**

represented by **Stephen C. Norman**  
Potter Anderson & Corroon, LLP  
1313 N. Market St., Hercules Plaza, 6th  
Flr.  
P.O. Box 951  
Wilmington, DE 19899-0951  
(302) 984-6038  
Fax: (302) 658-1192  
Email: snorman@potteranderson.com  
*TERMINATED: 11/20/1995*  
**LEAD ATTORNEY**  
**ATTORNEY TO BE NOTICED**

**Plaintiff**

**WMS Industries Inc.**

represented by **Christopher S. Sontchi**  
Ashby & Geddes  
222 Delaware Avenue  
P.O. Box 1150  
Wilmington, DE 19899  
(302) 654-1888  
Email: csontchi@ashby-geddes.com  
**LEAD ATTORNEY**  
**ATTORNEY TO BE NOTICED**

**John S. Grimm**  
Ashby & Geddes  
222 Delaware Avenue  
P.O. Box 1150  
Wilmington, DE 19899  
(302) 654-1888  
*TERMINATED: 10/12/1995*  
**LEAD ATTORNEY**  
**ATTORNEY TO BE NOTICED**

**Defendant****Alliance Gaming Corporation**

represented by **Alan J. Stone**  
 Morris, Nichols, Arsh & Tunnell  
 1201 North Market Street  
 P.O. Box 1347  
 Wilmington, DE 19899  
 (302) 658-9200  
 Email: astone@mnat.com  
**LEAD ATTORNEY**  
**ATTORNEY TO BE NOTICED**

**Defendant****BGII Acquisition Corporation**

represented by **Alan J. Stone**  
 (See above for address)  
**LEAD ATTORNEY**  
**ATTORNEY TO BE NOTICED**

**Counter Claimant****Alliance Gaming Corporation**

represented by **Alan J. Stone**  
 (See above for address)  
**LEAD ATTORNEY**  
**ATTORNEY TO BE NOTICED**

**Counter Claimant****BGII Acquisition Corporation**

represented by **Alan J. Stone**  
 (See above for address)  
**LEAD ATTORNEY**  
**ATTORNEY TO BE NOTICED**

V.

**Counter Defendant****Bally Gaming International, Inc.**

represented by **Stephen C. Norman**  
 (See above for address)  
**TERMINATED: 11/20/1995**  
**LEAD ATTORNEY**  
**ATTORNEY TO BE NOTICED**

| Date Filed | # | Docket Text  |
|------------|---|--|
| 09/05/1995 | 1 | COMPLAINT filed; Mag consent notice to pltf. FILING FEE \$ 120.00 RECEIPT # 110097 (dab) (Entered: 09/05/1995)   |
| 09/05/1995 |   | SUMMONS(ES) issued for Alliance Gaming Corp, BGII Acquisition Crp (dab) (Entered: 09/05/1995)  |
| 09/05/1995 | 2 | MOTION for Prompt Pretrial Conference by Bally Gaming Int'l to Expedite Disposition of this Action Answer Brief due 9/19/95 re: [2-1] motion (dab) (Entered: 09/05/1995) |

|            |    |   |
|------------|----|---|
| 09/05/1995 | 3  | RETURN OF SERVICE executed as to BGII Acquisition Crp 9/5/95 Answer due on 9/25/95 for BGII Acquisition Crp (lg) (Entered: 09/05/1995)  |
| 09/06/1995 | 4  | RETURN OF SERVICE executed as to Alliance Gaming Corp 9/5/95 Answer due on 9/25/95 for Alliance Gaming Corp (lg) (Entered: 09/06/1995)  |
| 09/06/1995 | 5  | CERTIFICATE OF SERVICE by Bally Gaming Int'l copies Request for Production of Documents. (lg) (Entered: 09/06/1995)   |
| 09/06/1995 |    | Tele-conference held before Judge Longobardi re scheduling (bkb) (Entered: 09/12/1995)  |
| 09/12/1995 | 6  | ORDER; parties to agree upon a discovery & briefing schedule, w/final brief due by 5:00 p.m. on 9/21/95; op. & ans. br. to be limited to no more than 35 pages each; reply brief not to exceed 10 pgs.; prelim. inj. hrg. sched. for 9/28/95 at 9:00 a.m., subject to change by the assigned judge. ( signed by Judge Joseph J. Longobardi ) copies to: cnsl. (bkb) (Entered: 09/12/1995) |
| 09/12/1995 |    | NOTE: Motion for prelim. injunction has yet to be filed. (bkb) (Entered: 09/12/1995)  |
| 09/12/1995 | 8  | CERTIFICATE OF SERVICE by Alliance Gaming Corp, BGII Acquisition Crp copies First Request for Production of Documents (lg) (Entered: 09/15/1995)  |
| 09/12/1995 | 9  | NOTICE by Alliance Gaming Corp, BGII Acquisition Crp to take deposition of Hans Kloss, Neil E. Jenkins, James J. Florio and Lewis Katz on 9/14/95 beginning at 10:00 a.m. (lg) (Entered: 09/15/1995)  |
| 09/12/1995 | 10 | ANSWER to complaint and COUNTERCLAIM by Alliance Gaming Corp, BGII Acquisition Crp against Bally Gaming Int'l (lg) (Entered: 09/15/1995)  |
| 09/13/1995 | 7  | CASE assigned to Judge Sue L. Robinson. Notice to all parties. (ds) (Entered: 09/14/1995)   |
| 09/14/1995 | 11 | MOTION by Alliance Gaming Corp, BGII Acquisition Crp with Proposed Order for Scott Edelman, Esq. to Appear Pro Hac Vice (lf) (Entered: 09/15/1995)  |
| 09/14/1995 | 12 | MOTION by Alliance Gaming Corp, BGII Acquisition Crp with Proposed Order for Duncan Logan, Esq. to Appear Pro Hac Vice (lf) (Entered: 09/15/1995)   |
| 09/14/1995 | 13 | MOTION by Alliance Gaming Corp, BGII Acquisition Crp with Proposed Order for Michael Hirschfeld, Esq. to Appear Pro Hac Vice (lf) (Entered: 09/15/1995)   |
| 09/15/1995 | 14 | ORDER, pltfs' papers in support of their motion for preliminary injunction due by 9/18/95; defts papers due 9/21/95; pltfs may file short response by 9/25/95; preliminary injunction hearing scheduled for   |

|            |    |  |
|------------|----|--|
|            |    | 9/27/95 at 2:00pm ( signed by Judge Sue L. Robinson ) copies to: cns1 (lf) (Entered: 09/18/1995)   |
| 09/15/1995 | 15 | NOTICE of attorney appearance on behalf of WMS Industries, Inc. a party that is pltf to related case that will be transferred to this district (lf) (Entered: 09/18/1995)                                  |
| 09/15/1995 |    | So Ordered granting [11-1] motion for Scott Edelman, Esq. to Appear Pro Hac Vice ( signed by Judge Sue L. Robinson ) Notice to all parties. (lf) (Entered: 09/18/1995)                                     |
| 09/15/1995 |    | So Ordered granting [12-1] motion for Duncan Logan, Esq. to Appear Pro Hac Vice ( signed by Judge Sue L. Robinson ) Notice to all parties. (lf) (Entered: 09/18/1995)                                      |
| 09/15/1995 |    | So Ordered granting [13-1] motion for Michael Hirschfeld, Esq. to Appear Pro Hac Vice ( signed by Judge Sue L. Robinson ) Notice to all parties. (lf) (Entered: 09/18/1995)                                |
| 09/15/1995 | 16 | Steno Notes for 9/7/95 by rptr. Slate (bkb) (Entered: 09/19/1995)  |
| 09/18/1995 | 17 | MOTION by Bally Gaming Int'l with Proposed Order to exceed page limitation (lf) (Entered: 09/19/1995)  |
| 09/18/1995 | 18 | MOTION by Alliance Gaming Corp, BGII Acquisition Crp with Proposed Order for Richard C. Tufaro to Appear Pro Hac Vice (lf) (Entered: 09/19/1995)   |
| 09/18/1995 | 19 | MOTION by Alliance Gaming Corp, BGII Acquisition Crp with Proposed Order for Fred Reinke, Esq. to Appear Pro Hac Vice (lf) (Entered: 09/19/1995)   |
| 09/18/1995 | 37 | Steno Notes for 9/15/95; Rptr: K. Maurer (lf) (Entered: 09/21/1995)  |
| 09/19/1995 | 20 | Letter dated 9/19/95 from Peter Walsh, Eqs. to Judge Robinson; Re: pltf has been able to meet the page limitation and therefore is withdrawing motion to exceed page limitation (lf) (Entered: 09/19/1995) |
| 09/19/1995 | 21 | Opening Brief Filed by Bally Gaming Int'l [2-1] motion to Expedite Answer Brief due 10/3/95 (SEALED) (lf) (Entered: 09/19/1995)  |
| 09/19/1995 | 22 | AFFIDAVIT by Bally Gaming Int'l Re: [21-1] opening brief; Re: Peter Walsh (SEALED) (lf) (Entered: 09/19/1995)  |
| 09/19/1995 | 23 | AFFIDAVIT by Bally Gaming Int'l Re: in support of preliminary injunction (lf) (Entered: 09/19/1995)  |
| 09/19/1995 | 24 | MEMORANDUM by WMS Industries Inc. in support of pltf motion for preliminary injunction (lf) Modified on 09/26/1995 (Entered: 09/19/1995)   |
| 09/19/1995 | 25 | MOTION by WMS Industries Inc. with Proposed Order to exceed page limitations (lf) (Entered: 09/19/1995)  |
| 09/19/1995 | 26 | NOTICE of Exhibits Volume I by WMS Industries Inc. (SEALED) (lf)   |

|            |    |   |
|------------|----|---|
|            |    | (Entered: 09/19/1995)   |
| 09/19/1995 | 27 | NOTICE of Exhibit Volume II by WMS Industries Inc. (SEALED) (lf) (Entered: 09/19/1995)  |
| 09/19/1995 | 28 | NOTICE of exhibits volume III by WMS Industries Inc. (SEALED) (lf) (Entered: 09/19/1995)  |
| 09/19/1995 | 29 | MOTION by Bally Gaming Int'l with Proposed Order to Compel or, alternatively, to preclude defts from introducing certain evidence Answer Brief due 10/3/95 re: [29-1] motion (lf) (Entered: 09/20/1995) |
| 09/19/1995 | 30 | Opening Brief Filed by Bally Gaming Int'l [29-1] motion to Compel or, alternatively, to preclude defts from introducing certain evidence Answer Brief due 10/3/95 (SEALED) (lf) (Entered: 09/20/1995)   |
| 09/19/1995 | 33 | Letter dated 9/19/95 from Alan Stone, Esq. to Judge RObinson; Re: filing motion to modify the briefing scheduled (lf) (Entered: 09/20/1995)   |
| 09/19/1995 |    | So Ordered granting [18-1] motion for Richard C. Tufaro to Appear Pro Hac Vice ( signed by Judge Sue L. Robinson ) Notice to all parties. (lf) (Entered: 09/20/1995)                                    |
| 09/19/1995 |    | So Ordered granting [19-1] motion for Fred Reinke, Esq. to Appear Pro Hac Vice ( signed by Judge Sue L. Robinson ) Notice to all parties. (lf) (Entered: 09/20/1995)                                    |
| 09/20/1995 | 31 | Compendium of deposition testimony to pltf's brief in support of its motion for a preliminary injunction; Volume 1 (SEALED) (lf) (Entered: 09/20/1995)  |
| 09/20/1995 | 32 | COmpendium of deposition testimony to pltf's brief in support of its motion for a preliminary injunction; Volume 2 (SEALED) (lf) (Entered: 09/20/1995)  |
| 09/20/1995 | 34 | MOTION by Alliance Gaming Corp, BGII Acquisition Crp with Proposed Order for midification of briefing scheduled (lf) (Entered: 09/20/1995)  |
| 09/20/1995 |    | So Ordered granting [34-1] motion for midification of briefing scheduled ( signed by Judge Sue L. Robinson ) Notice to all parties. (lf) (Entered: 09/20/1995)  |
| 09/20/1995 | 35 | RESPONSE by Bally Gaming Int'l in opposition to [34-1] motion for midification of briefing scheduled (lf) (Entered: 09/20/1995)   |
| 09/20/1995 |    | So Ordered granting [25-1] motion to exceed page limitations ( signed by Judge Sue L. Robinson ) Notice to all parties. (lf) (Entered: 09/20/1995)  |
| 09/20/1995 | 36 | NOTICE of joinder in motion to compel or, alternatively, to preclude defts from introducing certain evidence by WMS Industries Inc. (lf) (Entered: 09/20/1995)  |
| 09/20/1995 | 38 | CERTIFICATE OF SERVICE by Alliance Gaming Corp, BGII Acquisition Crp; Re: Defts' 2nd rqst for production of documents directed  |

|            |    |   |
|------------|----|---|
|            |    | to Bally and 1st rqst directed to WMS (lf) (Entered: 09/21/1995)  |
| 09/20/1995 | 39 | Letter dated 9/20/95 from Alan Stone, Esq. to Judge Robinson; Re: filing of defts' brief in opposition to pltf's motion to compel (lf) (Entered: 09/21/1995)  |
| 09/20/1995 | 40 | Answer Brief Filed by Alliance Gaming Corp, BGII Acquisition Crp [29-1] motion to Compel or, alternatively, to preclude defts from introducing certain evidence Reply Brief due 9/27/95 (SEALED) (lf) (Entered: 09/21/1995)                         |
| 09/21/1995 | 41 | Letter dated 9/21/95 from Michael Goldman, Es.q to Judge Robinson; Re: Response to Mr. Stone's letter to the court (lf) (Entered: 09/21/1995)   |
| 09/21/1995 | 42 | Letter dated 9/21/95 from John Grimm, Esq. to Judge Robinson; Re: filing WMS reply brief in suppot of pltf's motion to compel (lf) (Entered: 09/21/1995)  |
| 09/21/1995 | 43 | Reply Brief Filed by WMS Industries Inc. [29-1] motion to Compel or, alternatively, to preclude defts from introducing certain evidence (SEALED) (lf) (Entered: 09/21/1995)   |
| 09/21/1995 | 44 | Letter dated 9/21/95 from Alan Stone, Esq. to Judge Robinson; Re: Alliance Gaming Corp. announcing the rise of price of its tender offer to \$13.00 and increasing the number of shares it is puirchasing to 5.4 million (lf) (Entered: 09/21/1995) |
| 09/21/1995 | 45 | Reply Brief Filed by Bally Gaming Int'l [29-1] motion to Compel or, alternatively, to preclude defts from introducing certain evidence (SEALED) (lf) (Entered: 09/21/1995)  |
| 09/21/1995 | 46 | AFFIDAVIT of mailing (lf) (Entered: 09/22/1995)   |
| 09/22/1995 | 47 | Letter dated 9/22/95 from David Tekilits, Esq. to Judge Robinson; Re: filing of motion to exceed page limitations (lf) (Entered: 09/22/1995)  |
| 09/22/1995 | 48 | MOTION by Alliance Gaming Corp, BGII Acquisition Crp with Proposed Order to exceed page limitation for its answering brief in opposition to the motion for a preliminary injunction (lf) (Entered: 09/22/1995)                                      |
| 09/22/1995 | 49 | MOTION by Alliance Gaming Corp, BGII Acquisition Crp with Proposed Order to Strike affidavit of Neil Nicastro (lf) (Entered: 09/22/1995)  |
| 09/22/1995 | 50 | AFFIDAVIT by Alliance Gaming Corp, BGII Acquisition Crp of David Teklits (lf) (Entered: 09/22/1995)   |
| 09/22/1995 | 52 | Declaration of Richard Rainwater (lf) (Entered: 09/22/1995)   |
| 09/22/1995 | 53 | AFFIDAVIT of Craig Fields (SEALED) (lf) (Entered: 09/22/1995)   |
| 09/22/1995 | 54 | Answer Brief Filed by Alliance Gaming Corp, BGII Acquisition Crp [2-1] motion for preliminary injunction Reply Brief due 9/29/95 (SEALED) (lf) Modified on 09/22/1995 (Entered: 09/22/1995)   |

|            |    |  |
|------------|----|--|
| 09/22/1995 | 55 | Letter dated 9/22/95 from Alan Stone, Esq. to Judge Robinson; Re: Alliance Gaming Corp. amending its tender offer materials (lf) (Entered: 09/22/1995)   |
| 09/22/1995 | 56 | MOTION by Bally Gaming Int'l with Proposed Order for Claude Tusk, Esq. to Appear Pro Hac Vice (lf) (Entered: 09/25/1995)   |
| 09/22/1995 |    | Clerks Note: there is no DI 51 in this case (lf) (Entered: 10/06/1995)   |
| 09/25/1995 | 57 | Letter dated 9/25/95 from Kate Short to Clerk; Filing original declaration of Mr. Rainwater (lf) (Entered: 09/26/1995)   |
| 09/25/1995 | 58 | MOTION by WMS Industries Inc. with Proposed Order for Robert Goodman, Esq. to Appear Pro Hac Vice (lf) (Entered: 09/26/1995)   |
| 09/25/1995 | 59 | MOTION by WMS Industries Inc. with Proposed Order for Arthur Handler, Esq. to Appear Pro Hac Vice (lf) (Entered: 09/26/1995)   |
| 09/25/1995 | 60 | MOTION by WMS Industries Inc. with Proposed Order to unseal the memorandum of law in support of pltf WMS Industries, Inc.'s motion for preliminary injunction (lf) (Entered: 09/26/1995)   |
| 09/25/1995 | 61 | MEMORANDUM by WMS Industries Inc. in opposition to [49-1] motion to Strike affidavit of Neil Nicastro (lf) (Entered: 09/26/1995)   |
| 09/25/1995 | 62 | MEMORANDUM by WMS Industries Inc. in support of motion for preliminary injunction (SEALED) (lf) (Entered: 09/26/1995)  |
| 09/25/1995 |    | So Ordered granting [56-1] motion for Claude Tusk, Esq. to Appear Pro Hac Vice ( signed by Judge Sue L. Robinson ) Notice to all parties. (lf) (Entered: 09/26/1995)   |
| 09/25/1995 |    | So Ordered granting [48-1] motion to exceed page limitation for its answering brief in opposition to the motion for a preliminary injunction ( signed by Judge Sue L. Robinson ) Notice to all parties. (lf) (Entered: 09/26/1995) |
| 09/25/1995 | 63 | CERTIFICATE OF SERVICE by WMS Industries Inc.; Re: Response of pltf WMS Industries, Inc. to defts' 1st rqst for production of documents (lf) (Entered: 09/26/1995)   |
| 09/25/1995 | 64 | RESPONSE by Bally Gaming Int'l, WMS Industries Inc. in support of motion for preliminary junction (SEALED) (lf) (Entered: 09/26/1995)  |
| 09/25/1995 | 65 | NOTICE of compendium of deposition testimony to pltf's reply brief in support of its motion for a preliminary injunction by Bally Gaming Int'l, WMS Industries Inc. (SEALED) (lf) (Entered: 09/26/1995)                            |
| 09/25/1995 | 66 | NOTICE of Exhibit Volume IV by WMS Industries Inc. (SEALED) (lf) (Entered: 09/26/1995)   |
| 09/26/1995 | 67 | NOTICE of compendium of deposition transcript excerpts cited in defts' brief in opposition to pltfs' motion for a preliminary injunction by Alliance Gaming Corp, BGII Acquisition Crp (SEALED) (lf) (Entered: 09/26/1995)         |

|            |    |   |
|------------|----|---|
| 09/26/1995 |    | So Ordered granting [58-1] motion for Robert Goodman, Esq. to Appear Pro Hac Vice ( signed by Judge Sue L. Robinson ) Notice to all parties. (lf) (Entered: 09/26/1995)   |
| 09/26/1995 |    | So Ordered granting [59-1] motion for Arthur Handler, Esq. to Appear Pro Hac Vice ( signed by Judge Sue L. Robinson ) Notice to all parties. (lf) (Entered: 09/26/1995)   |
| 09/26/1995 |    | So Ordered granting [60-1] motion to unseal the memorandum of law in support of pltf WMS Industries, Inc.'s motion for preliminary injunction ( signed by Judge Sue L. Robinson ) Notice to all parties. (lf) (Entered: 09/26/1995) |
| 09/26/1995 | 68 | NOTICE of compendium of deposition exhibits cited in defts' brief in opposition to pltfs' motion for a preliminary injunction by Alliance Gaming Corp, BGII Acquisition Crp (SEALED) (lf) (Entered: 09/26/1995)                     |
| 09/26/1995 | 69 | Subpoena for Ladenburg, Thalmann & Co., Inc for 9/12/95 at 5:00pm (lf) (Entered: 09/27/1995)  |
| 09/26/1995 | 70 | STIPULATION with proposed order for consolidating Civil action numbers 95-538 and 95-586 (lf) (Entered: 09/27/1995)   |
| 09/27/1995 |    | Motion hearing held, Robinson, J., sitting; Rptr: H. Slate (lf) (Entered: 09/28/1995)   |
| 09/27/1995 |    | So Ordered granting [70-1] stipulation ( signed by Judge Sue L. Robinson ) Notice to all parties. (lf) (Entered: 09/28/1995)  |
| 09/28/1995 | 71 | Steno Notes for 9/27/95; Rptr: H. Slate (lf) (Entered: 09/28/1995)  |
| 09/29/1995 | 72 | MEMORANDUM OPINION ( signed by Judge Sue L. Robinson ) copies to: cnsl (lf) (Entered: 10/06/1995)   |
| 09/29/1995 | 73 | ORDER denying [49-1] motion to Strike affidavit of Neil Nicastro, denying [2-1] motion to Expedite ( signed by Judge Sue L. Robinson ) copies to: cnsl (lf) (Entered: 10/06/1995)   |
| 10/02/1995 | 74 | Letter dated 10/2/95 from Stephen Jenkins, Esq. to Judge Robinson; Re: Response of WMS Industries to motion seeking to have the period of delay reduced from 15 to 10 days (lf) (Entered: 10/06/1995)                               |
| 10/02/1995 | 75 | Letter dated 10/2/95 from Michael Goldman, Esq. to Judge Robinson; Re: pltf's response to the emergency motion of deft Alliance Gaming Corp. for modification (lf) (Entered: 10/06/1995)  |
| 10/02/1995 | 76 | MOTION by Alliance Gaming Corp, BGII Acquisition Crp modification, reargument and clarification (lf) (Entered: 10/06/1995)  |
| 10/02/1995 | 77 | Declaration of Michael Hirschfeld (lf) (Entered: 10/06/1995)  |
| 10/02/1995 | 78 | Declaration of John Godfrey (lf) (Entered: 10/06/1995)  |
| 10/02/1995 | 79 | Declaration of Joel Kirschbaum (lf) (Entered: 10/06/1995)   |

|            |    |   |
|------------|----|---|
| 10/02/1995 | 80 | ORDER granting in part, denying in part [76-1] motion modification, reargument and clarification; denying modification and reargument; granting clarification - pltfs each shall post a nominal bond of \$10,000 ( signed by Judge Sue L. Robinson ) copies to: cnsl (lf) (Entered: 10/06/1995) |
| 10/02/1995 | 81 | AFFIDAVIT of Alvin Hicks (lf) (Entered: 10/06/1995)   |
| 10/02/1995 | 82 | ANSWER by Bally Gaming Int'l to [10-2] counter claim (lf) (Entered: 10/06/1995)   |
| 10/03/1995 | 83 | Letter dated 10/3/95 from Christopher Sontchi, Esq. to Clerk; Re: filing of affidavit of Arthur Handler (lf) (Entered: 10/06/1995)  |
| 10/03/1995 | 84 | Letter dated 10/2/95 from Alan Stone, Esq. to Judge Robinson; Re: motion for modification and clarification (lf) (Entered: 10/06/1995)  |
| 10/03/1995 | 85 | BOND ON PRELIMINARY INJUNCTION ORDER \$ 10,000 entered by Bally Gaming Int'l (lf) (Entered: 10/06/1995)   |
| 10/03/1995 | 86 | NOTICE OF APPEAL by Alliance Gaming Corp, BGII Acquisition Crp; Joel Kirschbaum, Steven Greathouse, Anthony Dicesare, Craig Fields, David Robbins, Alfred Wilms, and John Does 1-5 [73-1] order, [72-1] order . Time: 9:23 Fee Status: paid (lf) (Entered: 10/06/1995)                          |
| 10/03/1995 | 87 | OPPOSITION AFFIDAVIT filed by pltfs (lf) (Entered: 10/06/1995)  |
| 10/03/1995 | 88 | NOTICE of withdrawal of Notice of Appeal by Alliance Gaming Corp, BGII Acquisition Crp, Joel Kirschbaum, Steven Greathouse, Anthony Dicesare, Craig Fields, David Robbins, Alfred Wilms and John Does 1-5 (lf) (Entered: 10/06/1995)  |
| 10/04/1995 | 89 | BOND \$ 10,000 entered by WMS Industries Inc. (lf) (Entered: 10/06/1995)  |
| 10/06/1995 | 90 | CERTIFICATE OF SERVICE by Bally Gaming Int'l; Re: Bally's response to defts' 2nd rqst for production of documents (lf) (Entered: 10/11/1995)  |
| 10/10/1995 | 91 | NOTICE of attorney appearance for WMS Industries Inc. by Christopher S. Sontchi and request for service (lf) (Entered: 10/12/1995)  |
| 10/12/1995 | 92 | CERTIFICATE OF SERVICE by Bally Gaming Int'l; Re: Pltf's response to defts' 1st rqst for production of documents (lf) (Entered: 10/16/1995)   |
| 10/13/1995 | 93 | MOTION by Alliance Gaming Corp, BGII Acquisition Crp for prompt pretrial conf. for the purpose of expediting the disposition of defts' counterclaim (lf) (Entered: 10/16/1995)  |
| 10/13/1995 | 94 | STIPULATION with proposed order; Re: defts' time to move, answer or otherwise plead in response to the complaint by pltf WMS Industries extended until 10/13/95 (lf) (Entered: 10/16/1995)  |
| 10/13/1995 | 95 | MOTION by Alliance Gaming Corp, BGII Acquisition Crp for Leave to amend counterclaim (lf) (Entered: 10/16/1995)   |

|            |     |  |
|------------|-----|--|
| 10/13/1995 | 96  | ANSWER to Complaint by WMS Industries Inc. (lf) (Entered: 10/16/1995)  |
| 10/16/1995 | 97  | Letter dated 10/16/95 from Alan Stone, Esq. to Judge Robinson; Re: rqsting a telecnf. in regards to defts' recent motions (lf) (Entered: 10/16/1995)       |
| 10/16/1995 |     | So Ordered granting [94-1] stipulation ( signed by Judge Sue L. Robinson ) Notice to all parties. (lf) (Entered: 10/16/1995)                               |
| 10/17/1995 | 98  | REVISED MOTION by Alliance Gaming Corp, BGII Acquisition Crp to Amend counterclaims Answer Brief due 10/31/95 re: [98-1] motion (lf) (Entered: 10/18/1995) |
| 10/19/1995 | 99  | Motion for order of voluntary dismissal (lf) (Entered: 10/20/1995)   |
| 10/20/1995 |     | So Ordered granting [99-1] notice ( signed by Judge Sue L. Robinson ) Notice to all parties. (lf) (Entered: 10/23/1995)                                    |
| 11/16/1995 | 100 | STIPULATION of dismissal (lf) (Entered: 11/20/1995)  |
| 11/21/1995 |     | So Ordered granting [100-1] dismiss/dismissal stipulation ( signed by Judge Sue L. Robinson ) Notice to all parties. (lf) (Entered: 11/21/1995)            |
| 11/21/1995 |     | Case closed (lf) (Entered: 11/21/1995)   |
| 09/16/1996 | 101 | ORDER, forwarding case to Archives ( signed by Judge Sue L. Robinson ) (lf) (Entered: 09/17/1996)  |

| PACER Service Center |               |                  |  |
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| Transaction Receipt  |               |                  |  |
| 06/15/2006 10:07:36  |               |                  |  |
| PACER Login:         | r10883        | Client Code:     | 152626   |
| Description:         | Docket Report | Search Criteria: | 1:95-cv-00538-SLR Start date: 1/1/1970 End date: 6/15/2006 |
| Billable Pages:      | 6             | Cost:            | 0.48   |

**EXHIBIT F**

CLOSED

**U.S. District Court  
District of Delaware (Wilmington)  
CIVIL DOCKET FOR CASE #: 1:95-cv-00586-SLR**

WMS Industries Inc. v. Alliance Gaming Corp, et al  
Assigned to: Honorable Sue L. Robinson  
Demand: \$0  
Case in other court: USDC/SD/NY, 95CV 7710  
Cause: 15:78m(a) Securities Exchange Act

Date Filed: 09/26/1995  
Jury Demand: None  
Nature of Suit: 850  
Securities/Commodities  
Jurisdiction: Federal Question

**Plaintiff**

**WMS Industries Inc.**

V.

**Defendant**

**Alliance Gaming Corporation**

**Defendant**

**BGII Acquisition Corporation**

**Defendant**

**Joel Kirschbaum**

**Defendant**

**Steven Greathouse**

**Defendant**

**Anthony L. Dicesare**

**Defendant**

**Craig Fields**

**Defendant**

**David Robbins**

**Defendant**

**Alfred W. Wilms**

| Date Filed | # | Docket Text   |
|------------|---|---|
| 09/26/1995 |   | Original file, certified copy of transfer order and docket sheet received from Southern District of New York (see front of file). (dab) (Entered: 09/26/1995) |

|            |   |  |
|------------|---|--|
| 09/26/1995 | 1 | COMPLAINT filed in USDC SD/New York on 9/6/95; original file, DI's 1-7 attached. (dab) (Entered: 09/26/1995)   |
| 09/26/1995 | 4 | ORDER granting motion to transfer case to USDC Delaware (entered by Judge John S. Martin, Jr on 9/13/95 in SD of New York) (dab) (Entered: 09/26/1995) |
| 09/26/1995 | 5 | Local Counsel Letter. Set Notice of Compliance for local counsel to enter an appearance for 10/26/95 (dab) (Entered: 09/26/1995)                       |
| 10/04/1995 | 6 | CASE assigned to Judge Sue L. Robinson. Notice to all parties. (ds) (Entered: 10/04/1995)  |
| 11/21/1995 |   | Case closed (lf) (Entered: 11/21/1995)   |

| PACER Service Center |               |                  |  |
|----------------------|---------------|------------------|--|
| Transaction Receipt  |               |                  |  |
| 06/15/2006 11:25:59  |               |                  |  |
| PACER Login:         | r11239        | Client Code:     | asg/152626   |
| Description:         | Docket Report | Search Criteria: | 1:95-cv-00586-SLR Start date: 1/1/1970 End date: 6/15/2006 |
| Billable Pages:      | 1             | Cost:            | 0.08   |

**EXHIBIT G**

CLOSED

**U.S. District Court  
District of Delaware (Wilmington)  
CIVIL DOCKET FOR CASE #: 1:95-cv-00716-MMS**

Alliance Gaming Corp, et al v. Bally Entertainment  
Assigned to: Judge Murray M. Schwartz  
Demand: \$0  
Cause: 15:1114 Trademark Infringement

Date Filed: 11/20/1995  
Jury Demand: None  
Nature of Suit: 840 Trademark  
Jurisdiction: Federal Question

**Plaintiff**

**Alliance Gaming Corporation**

represented by **Henry E. Gallagher, Jr.**  
Connolly, Bove, Lodge & Hutz  
The Nemours Building  
1007 North Orange Street  
P.O. Box 2207  
Wilmington, DE 19899  
(302) 658-9141  
Email: hgallagher@cblh.com  
**LEAD ATTORNEY**  
**ATTORNEY TO BE NOTICED**

**Plaintiff**

**BGII Acquisition Corporation**

represented by **Henry E. Gallagher, Jr.**  
(See above for address)  
**LEAD ATTORNEY**  
**ATTORNEY TO BE NOTICED**

**Plaintiff**

**Bally Gaming International, Inc.**

represented by **Michael D. Goldman**  
Potter Anderson & Corroon LLP  
1313 N. Market St., Hercules Plaza, 6th  
Flr.  
P.O. Box 951  
Wilmington, DE 19899-0951  
(302) 984-6000  
Fax: (302) 658-1192  
Email: mgoldman@potteranderson.com  
  
**LEAD ATTORNEY**  
**ATTORNEY TO BE NOTICED**

V.

**Defendant**

**Bally Entertainment Corporation**

represented by **Richard Douglas Heins**  
Ashby & Geddes

222 Delaware Avenue  
 P.O. Box 1150  
 Wilmington, DE 19899  
 (302) 654-1888  
 Email: rheins@ashby-geddes.com  
**LEAD ATTORNEY**  
**ATTORNEY TO BE NOTICED**

| Date Filed | #  | Docket Text   |
|------------|----|---|
| 11/20/1995 | 1  | COMPLAINT filed; Mag consent notice to pltf. FILING FEE \$ 120.00 RECEIPT # 110954 (dab) (Entered: 11/21/1995)  |
| 11/20/1995 |    | SUMMONS(ES) issued for Bally Entertainment (dab) (Entered: 11/21/1995)  |
| 11/21/1995 | 2  | SUMMONS executed as to Bally Entertainment 11/21/95 by Parcels, Inc. Answer due on 12/11/95 for Bally Entertainment (lij) (Entered: 11/29/1995)   |
| 11/28/1995 | 3  | MOTION by Bally Entertainment with Proposed Order to Dismiss, or in the alternative for change of venue or a stay of the action re: [3-1] motion (ds) (Entered: 11/30/1995)   |
| 11/28/1995 | 4  | Opening Brief Filed by Bally Entertainment [3-1] motion to Dismiss, or in the alternative for change of venue or a stay of the action Answer Brief due 12/12/95 (ds) (Entered: 11/30/1995)  |
| 11/28/1995 | 5  | AFFIDAVIT of Clive S. Cummis Re: [3-1] motion to Dismiss, or in the alternative for change of venue or a stay of the action (ds) (Entered: 11/30/1995)  |
| 11/28/1995 | 6  | AFFIDAVIT of Arthur M. Goldberg Re: [3-1] motion to Dismiss, or in the alternative for change of venue or a stay of the action (ds) (Entered: 11/30/1995)   |
| 11/28/1995 | 7  | REQUEST by Bally Entertainment for oral argument (ds) (Entered: 11/30/1995)   |
| 11/30/1995 | 8  | CASE assigned to Judge Murray M. Schwartz. Notice to all parties. (ds) (Entered: 11/30/1995)  |
| 12/13/1995 | 9  | Answer Brief RE Memorandum in opposition Filed by Alliance Gaming Corp, BGII Acquisition Crp [3-1] motion to Dismiss, or in the alternative for change of venue or a stay of the action Reply Brief due 12/20/95 (ds) (Entered: 12/14/1995) |
| 12/13/1995 | 10 | MOTION by Alliance Gaming Corp, BGII Acquisition Crp to Strike portions of [6-1] affidavit and portions of [4-1] opening brief Answer Brief due 12/27/95 re: [10-1] motion (ds) (Entered: 12/14/1995)                                       |
| 12/13/1995 | 11 | AFFIDAVIT of Steve Greathouse Re: [10-1] motion to Strike portions of [6-1] affidavit and portions of [4-1] opening brief (ds) (Entered:  |

|            |    |   |
|------------|----|---|
|            |    | 12/14/1995)   |
| 12/13/1995 | 12 | Letter dated 12/13/95 from Michael Goldman to Judge Schwartz re pltf. Bally Gaming International Inc joins in the memorandum of Alliance Gaming Corp. and BGII Acquisition Corp in opposition to the motion to dismiss. (ds) (Entered: 12/14/1995)        |
| 12/19/1995 | 13 | Reply Brief Filed by Bally Entertainment [3-1] motion to Dismiss, or in the alternative for change of venue or a stay of the action and in opposition to motion to strike portions of an affidavit and brief (ds) (Entered: 12/21/1995)                   |
| 12/19/1995 | 13 | Brief in opposition incorporated in reply brief Filed by Bally Entertainment [10-1] motion to Strike portions of [6-1] affidavit and portions of [4-1] opening brief Reply Brief due 12/26/95 (SEE DKT. NO. 13) (ds) (Entered: 12/21/1995)                |
| 12/19/1995 | 14 | SUPPLEMENTAL AFFIDAVIT of Clive S. Cummis in further support of motion to dismiss, transfer or stay Re: [13-1] reply brief (ds) (Entered: 12/21/1995)   |
| 02/01/1996 |    | Deadline updated per calendar notice Motion Hearing set for 10:30 4/26/96 for [3-1] motion to Dismiss, or in the alternative for change of venue or a stay of the action (ds) (Entered: 02/05/1996)   |
| 04/24/1996 | 15 | Proposed Order re dismissal of action without prejudice and reopening should settlement not be consummated filed by Alliance Gaming Corp, BGII Acquisition Crp, Bally Gaming Int'l, Bally Entertainment (ds) Modified on 04/24/1996 (Entered: 04/24/1996) |
| 04/25/1996 |    | So Ordered [15-1] proposed order (signed by Judge Murray M. Schwartz) Notice to all parties. (ds) (Entered: 04/30/1996)   |
| 04/25/1996 |    | Case closed (ds) (Entered: 04/30/1996)  |
| 06/14/1996 | 16 | ORDER that the time within which any party may apply to the Court to reopen the action if settlement is not consummated is extended 60 days or until 8/22/96 (signed by Judge Murray M. Schwartz) copies to: cnsl (ds) (Entered: 06/18/1996)              |
| 06/20/1996 | 17 | STIPULATION of dismissal with prejudice (copy to MMS) (ds) (Entered: 06/20/1996)  |

| PACER Service Center |               |                  |  |
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| Transaction Receipt  |               |                  |  |
| 06/15/2006 10:09:24  |               |                  |  |
| PACER Login:         | rj0883        | Client Code:     | 152626   |
| Description:         | Docket Report | Search Criteria: | 1:95-cv-00716-MMS Start date: 1/1/1970 End date: |

|                    |   |       |      |           |
|--------------------|---|-------|------|-----------|
| Billable<br>Pages: | 2 | Cost: | 0.16 | 6/15/2006 |
|--------------------|---|-------|------|-----------|

**EXHIBIT H**

06/15/2006 11:57

**REGISTER IN CHANCERY  
NEW CASTLE COUNTY  
CASE MASTER LIST**

1

| CASE NO                | CASE TYPE | DERIV. ACTION | STATE                   | DATE      | REASON | START DATE | --- CALENDAR ---       |
|------------------------|-----------|---------------|-------------------------|-----------|--------|------------|------------------------|
| CA14367                | A         | 2             | INACTIVE                | 21-MAR-97 | 27     | 19-JUN-95  | CALL DATE<br>20-MAR-97 |
| ----- CHANCELLOR ----- |           |               | CHANCELLOR OF DISMISSAL |           |        | INCLUDES   |                        |
|                        | CODE      | DATE          |                         | 2         |        | 0          |                        |
| 21-MAR-97              |           |               |                         |           |        |            |                        |

TYPES OF RELIEF  
28

ROBERT ISTRUOGO,  
VS.  
RICHARD GILLMAN, BALLY GAMING INTERNATIONAL, INC., ET AL

PLAINTIFF ATTORNEYS  
MILLER, KATHLEEN M.  
SMITH,KATZENSTEIN&FURLOW  
P.O. BOX 410  
WILMINGTON, DE 19899  
652-8400

PLAINTIFF CAPTION  
ROBERT ISTRUOGO,

DEFENDANT CAPTION

RICHARD GILLMAN,NEIL E.JENKINS,S.J.BEGUN,  
CHARLES C.CARELLA,JAMES J.FLORIO,LEWIS KATZ  
KENNETH D.MCPHERSON,BALLY GAMING INTERNATIO  
NAL,INC.,AND ALLIANCE GAMING CORP.,

DOCKET ENTRIES

DOCKET NO 1 COMPLAINT FOR BREACH OF FIDUCIARY DUTIES, KATHLEEN  
ENTERED 19-JUN-95 MILLER ATTY FOR PLT.

DUE  
TYPE/STATUS /

DOCKET NO 2 LTR TO MASTER KIGER FROM KATHLEEN M MILLER DTD 06-20-95 -  
ENTERED 20-JUN-95 FILE

DUE  
TYPE/STATUS /

DOCKET NO 3 MOTION & ORDER FOR APPOINTMENT OF SPECIAL PROCESS SERVER  
ENTERED 20-JUN-95 SIGNED BY MASTER KIGER DTD 06-21-95 - FILED

DUE  
TYPE/STATUS /

DOCKET NO 4 ISSUED SUMMONS TO SPEC.PROC.SER. 1 COPY SHR.RET:  
ENTERED 21-JUN-95

DUE  
TYPE/STATUS /

DOCKET NO 4 SERVED BALLY GAMING INTERNATIONAL, INC. BY SERVING  
ENTERED 28-JUN-95 CORP.TRUST CO.LEAVING COPY WITH JOANNE SANTIAGO ON 06-22-  
95.

DUE  
TYPE/STATUS /

06/15/2006 11:57

REGISTER IN CHANCERY  
NEW CASTLE COUNTY  
CASE MASTER LIST

2

DOCKET NO 5 ISSUED 3104 SUMMONS TO SPEC.PROC.SER 1 COPY SHR.RET:  
ENTERED 21-JUN-95  
DUE  
TYPE/STATUS /

DOCKET NO 5 SERVED ALLIANCE GAMING CORP BY SERVING SECRETARY OF  
ENTERED 28-JUN-95 STATE LEAVING COPY WITH DEBBIE STONE ON 06-22-95.  
DUE  
TYPE/STATUS /

DOCKET NO 6 ISSUED 3114 SUMMONS TO SPEC.PROC.SER. 7 COPIES SHR.RET:  
ENTERED 21-JUN-95  
DUE  
TYPE/STATUS /

DOCKET NO 6 SERVED ALL INDIVIDUALS BY SERVING CORP.TRUST CO.LEAVING  
ENTERED 28-JUN-95 COPIES WITH JOANNE SANTIAGO ON 06-22-95.  
DUE  
TYPE/STATUS /

DOCKET NO 7 REGISTER'S CERTIFICATE - FILED  
ENTERED 28-JUN-95  
DUE  
TYPE/STATUS /

DOCKET NO 8 AMENDMENT TO THE COMPLAINT & AFFIDAVIT - FILED  
ENTERED 13-JUL-95  
DUE  
TYPE/STATUS /

DOCKET NO 8 STATUS LTR. FROM KATHLEEN MILLER, ESQ.  
ENTERED 27-FEB-97  
DUE  
TYPE/STATUS 50 /

DOCKET NO 9 NOTICE OF DISMISSAL - FILED  
ENTERED 21-MAR-97  
DUE  
TYPE/STATUS /

**EXHIBIT I**

06/15/2006 11:56

**REGISTER IN CHANCERY  
NEW CASTLE COUNTY  
CASE MASTER LIST**

1

| CASE NO                | CASE TYPE | DERIV. ACTION | STATE                   | DATE      | REASON | START DATE | --- CALENDAR ---       |
|------------------------|-----------|---------------|-------------------------|-----------|--------|------------|------------------------|
| CA14440                | A         | 4             | INACTIVE                | 20-MAR-97 | 25     | 25-JUL-95  | CALL DATE<br>29-JAN-96 |
| ----- CHANCELLOR ----- |           |               | CHANCELLOR OF DISMISSAL |           |        | INCLUDES   |                        |
|                        | CODE      | DATE          |                         | 2         |        | 0          |                        |
| 20-MAR-97              |           |               |                         |           |        |            |                        |

TYPES OF RELIEF  
08 19

ALLIANCE GAMING CORP.,  
VS.  
BALLY GAMING INTERNATIONAL, INC., RICHARD GILLMAN, ET AL

PLAINTIFF ATTORNEYS  
TEKLITS, DAVID J.  
MORRIS, NICHOLS, ARSH & TUNNELL  
P.O. BOX 1347  
WILMINGTON, DE. 19899  
658-9200

|  |   |
|--|---|
| DEFENDANT ATTORNEYS<br>NORMAN STEPHEN C.<br>POTTER ANDERSON & CORROON<br>P.O. BOX 951<br>WILMINGTON, DE. 19899<br>658-6771 | ASHBY LAWRENCE C<br>ASHBY & GEDDES<br>P.O.BOX 1150, 222 DELAWARE AVE 17TH FL<br>WILM., DE 19899<br>654-1888 |
|--|---|

PLAINTIFF CAPTION  
ALLIANCE GAMING CORPORATION,

DEFENDANT CAPTION  
BALLY GAMING INTERNATIONAL, INC., WMS INDUS-  
TRIES INC., RICHARD GILLMAN, HANS KLOSS, NEIL  
E. JENKINS, CHARLES C. CARELLA, JAMES J. FLORIO,  
LEWIS KATZ, AND KENNETH D. MCPHERSON,  
DOCKET ENTRIES

|  |   |
|--|---|
| DOCKET NO 1<br>ENTERED 25-JUL-95<br>DUE<br>TYPE/STATUS / | COMPLAINT TO COMPEL SHAREHOLDER MEETING, PRELIM. INJ.,<br>DAVID TEKLITS ATTY FOR PLT  |
| DOCKET NO 2<br>ENTERED 25-JUL-95<br>DUE<br>TYPE/STATUS / | LTR. TO MASTER KIGER FROM DAVID J. TEKLITS DTD. 07-25-95 - FILE D   |
| DOCKET NO 3<br>ENTERED 25-JUL-95<br>DUE<br>TYPE/STATUS / | NOTICE OF MOTION, MOTION & ORDER FOR APPOINTMENT OF<br>SPECIAL PROCESS SERVERS SIGNED BY CH. ALLEN DTD. 07-25-95 -<br>FILED |
| DOCKET NO 4<br>ENTERED 26-JUL-95<br>DUE<br>TYPE/STATUS / | ISSUED SUMMONS TO SPEC. PROC. SER. 2 COPIES SHR. RET.   |

06/15/2006 11:56

**REGISTER IN CHANCERY  
NEW CASTLE COUNTY  
CASE MASTER LIST**

2

|   |  |
|---|--|
| DOCKET NO 4<br>ENTERED 28-JUL-95<br>DUE<br>TYPE/STATUS /  | SERVED WMS INDUSTRIES,INC.,BALLY GAMING INTERNATIONAL,INC. BY SERVING CORP. TRUST CO.ON 07-25-95.  |
| DOCKET NO 5<br>ENTERED 26-JUL-95<br>DUE<br>TYPE/STATUS /  | ISSUED 3114 SUMMONS TO SPEC.PROC.SER. 7 COPIES SHR.RET:  |
| DOCKET NO 5<br>ENTERED 28-JUL-95<br>DUE<br>TYPE/STATUS /  | SERVED ALL INDIVIDUALS BY SERVING CORPORATION TRUST CO.ON 07-25-95.  |
| DOCKET NO 6<br>ENTERED 25-JUL-95<br>DUE<br>TYPE/STATUS /  | NOTICE OF MOTION,MOTION FOR PRELIM.INJ. - FILED  |
| DOCKET NO 7<br>ENTERED 25-JUL-95<br>DUE<br>TYPE/STATUS /  | NOTICE OF MOTION,MOTION & PROP.ORDER TO EXPEDITE PROCEEDINGS ORDER RETURNED UNSIGNED ON 08-03-95   |
| DOCKET NO 8<br>ENTERED 25-JUL-95<br>DUE<br>TYPE/STATUS /  | PLTS FIRST REQUEST FOR PRODUCTION OF DOCUMENTS - FILED   |
| DOCKET NO 9<br>ENTERED 26-JUL-95<br>DUE<br>TYPE/STATUS /  | LTR TO V.C.JACOBS FROM S.MARK HURD DTD.07-25-95 - FILED  |
| DOCKET NO 10<br>ENTERED 26-JUL-95<br>DUE<br>TYPE/STATUS / | PLTS.MEMO.IN SUPPORT OF ITS APPLICATION FOR A SUMMARY SETT- ING OF THE DATE OF THE DATE OF THE ANNUAL MEETING OF BALLY GAMING INTERNATIONA. INC. - FILED |
| DOCKET NO 11<br>ENTERED 27-JUL-95<br>DUE<br>TYPE/STATUS / | LTR TO V.C.JACOBS FROM MICHAEL D.GOLDMAN DTD.07-27-95 - FILE   |
| DOCKET NO 12<br>ENTERED 27-JUL-95<br>DUE<br>TYPE/STATUS / | LTR TO V.C.JACOBS FROM MICHAEL D.GOLDMAN DTD.07-27-95 - FILE   |
| DOCKET NO 13<br>ENTERED 27-JUL-95<br>DUE<br>TYPE/STATUS / | AFFIDAVIT OF MARTIN NUSSBAUM I - FILED   |

06/15/2006 11:56

**REGISTER IN CHANCERY  
NEW CASTLE COUNTY  
CASE MASTER LIST**

3

|                   |   |
|-------------------|---|
| DOCKET NO 14      | AFFIDAVIT OF MARTIN NUSSBAUM II - FILED   |
| ENTERED 27-JUL-95 |   |
| DUE               |   |
| TYPE/STATUS /     |   |
| DOCKET NO 15      | LTR TO V.C.JACOBS FROM THOMAS R.HUNT,JR.DTD.07-27-95 - FILED  |
| ENTERED 27-JUL-95 |   |
| DUE               |   |
| TYPE/STATUS /     |   |
| DOCKET NO 16      | AFFIDAVIT OF DAVID D.JOHNSON - FILED  |
| ENTERED 27-JUL-95 |   |
| DUE               |   |
| TYPE/STATUS /     |   |
| DOCKET NO 17      | LTR TO V.C.JACOBS FROM MICHAEL D.GOLDMAN DTD.07-27-95 - FILE  |
| ENTERED 27-JUL-95 |   |
| DUE               |   |
| TYPE/STATUS /     |   |
| DOCKET NO 18      | LTR TO V.C.JACOBS FROM THOMAS R.HUNT,JR.DTD.07-31-95 - FILED  |
| ENTERED 31-JUL-95 |   |
| DUE               |   |
| TYPE/STATUS /     |   |
| DOCKET NO 19      | MOTION & PROP.ORDER FOR ADMISSION PRO HAC VICE (ARTHUR M.HANDLER) ORDER SIGNED BY V.C.JACOBS DTD.08-02-95 |
| ENTERED 01-AUG-95 |   |
| DUE               |   |
| TYPE/STATUS /     |   |
| DOCKET NO 20      | MOTION & PROP.ORDER FOR ADMISSION PRO HAC VICE (ROBERT S.GOODMAN) ORDER SIGNED BY V.C.JACOBS DTD.08-02-95 |
| ENTERED 01-AUG-95 |   |
| DUE               |   |
| TYPE/STATUS /     |   |
| DOCKET NO 21      | ANSWER (COUNT VI) (STEPHEN C.NORMAN ATTY FOR DEF.S.BALLY GAM-ING & IND.DEFS.EXCEPT "WMS")                 |
| ENTERED 01-AUG-95 |   |
| DUE               |   |
| TYPE/STATUS /     |   |
| DOCKET NO 22      | LTR TO V.C.JACOBS FROM LAWRENCE C.ASHBY DTD.08-01-95 - FILED  |
| ENTERED 02-AUG-95 |   |
| DUE               |   |
| TYPE/STATUS /     |   |
| DOCKET NO 23      | LTR TO V.C.JACOBS FROM STEPHEN C.NORMAN DTD.08-01-95 - FILED  |
| ENTERED 02-AUG-95 |   |
| DUE               |   |
| TYPE/STATUS /     |   |
| DOCKET NO 24      | LTR TO V.C.JACOBS FROM STEPHEN C.NORMAN DTD.08-02-95 - FILED  |
| ENTERED 02-AUG-95 |   |
| DUE               |   |
| TYPE/STATUS /     |   |

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NEW CASTLE COUNTY  
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|---|---|
| DOCKET NO 25<br>ENTERED 03-AUG-95<br>DUE<br>TYPE/STATUS / | LTR TO V.C.JACOBS FROM DAVID J.TEKLITS DTD.08-03-95 - FILED   |
| DOCKET NO 26<br>ENTERED 03-AUG-95<br>DUE<br>TYPE/STATUS / | MEMO OF LAW OF PLT ALLIANCE GAMING CORP. IN SUPPORT OF EXPEDI- TED DISCOVERY WITH RESPECT TO ACCESS TO DUE DILIGENCE INFORMATION CONCERNING DEF.BALLY GAMING INTERNATIONAL,INC. - FILED |
| DOCKET NO 27<br>ENTERED 03-AUG-95<br>DUE<br>TYPE/STATUS / | AFFIDAVIT OF LAWRENCE LEDERMAN - FILED  |
| DOCKET NO 28<br>ENTERED 03-AUG-95<br>DUE<br>TYPE/STATUS / | NOTICE OF SERVICE (PLTS.FIRST SET OF INTERROGATORIES DIRECTED TO DEF'S & PLTS.SECOND REQUEST FOR PRODUCTION OF DOCUMENTS)   |
| DOCKET NO 29<br>ENTERED 04-AUG-95<br>DUE<br>TYPE/STATUS / | NOTICE OF SERVICE (DEFS.FIRST SET OF INTERROGATORIES DIRECTED TO PLT.) - FILED  |
| DOCKET NO 30<br>ENTERED 04-AUG-95<br>DUE<br>TYPE/STATUS / | NOTICE OF SERVICE (DEFS.FIRST REQUEST FOR PRODUCTION OF DOCUMENTS) - FILED  |
| DOCKET NO 31<br>ENTERED 07-AUG-95<br>DUE<br>TYPE/STATUS / | REGISTER'S CERTIFICATE - FILED  |
| DOCKET NO 32<br>ENTERED 07-AUG-95<br>DUE<br>TYPE/STATUS / | LTR TO COUNSEL FROM V.C.JACOBS DTD.08-04-95, RE:PLTS.RENEWED APPLICATION FOR GENERAL EXPEDITED DISCOVERY IS DENIED, IT IS SO ORDERED - FILED  |
| DOCKET NO 33<br>ENTERED 08-AUG-95<br>DUE<br>TYPE/STATUS / | NOTICE OF SERVICE (PLTS.RESPONSE TO DEFS.FIRST SET OF INTERRO- GATORIES DIRECTED TO PLTS.& PLTS.RESPONSE TO DEFS.FIRST RE- QUEST FOR THE PRODUCTION OF DOCUMENTS) - FILED               |
| DOCKET NO 34<br>ENTERED 08-AUG-95<br>DUE<br>TYPE/STATUS / | NOTICE OF SERVICE (DEFS.ANSWERS TO PLTS.FIRST SET OF INTERRO- GATORIES) - FILED   |
| DOCKET NO 35<br>ENTERED 08-AUG-95<br>DUE<br>TYPE/STATUS / | NOTICE OF SERVICE (DEFS.RESPONSES & OBJECTIONS TO PLTS.SECOND REQUEST FOR PRODUCTION OF DOCUMENTS) - FILED  |

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| DOCKET NO 36<br>ENTERED 09-AUG-95<br>DUE<br>TYPE/STATUS / | LTR TO V.C.JACOBS FROM MICHAEL D.GOLDMAN DTD.08-08-95 - FILED   |
| DOCKET NO 37<br>ENTERED 09-AUG-95<br>DUE<br>TYPE/STATUS / | LTR TO V.C.JACOBS FROM DAVID J.TEKLITS DTD.08-09-95 - FILED   |
| DOCKET NO 38<br>ENTERED 09-AUG-95<br>DUE<br>TYPE/STATUS / | NOTICE OF MOTION,MOTION & PROP.ORDER FOR ADMISSION PRO HAC VICE,(DUNCAN J.LOGAN)  |
| DOCKET NO 39<br>ENTERED 09-AUG-95<br>DUE<br>TYPE/STATUS / | NOTICE OF MOTION,MOTION & PROP.ORDER FOR ADMISSION PRO HAC VICE,(SCOTT A.EDELMAN)   |
| DOCKET NO 40<br>ENTERED 09-AUG-95<br>DUE<br>TYPE/STATUS / | NOTICE OF MOTION,MOTION & PROP.ORDER FOR ADMISSION PRO HAC VICE,(MICHAEL L.HIRSCHFELD)  |
| DOCKET NO 41<br>ENTERED 09-AUG-95<br>DUE<br>TYPE/STATUS / | DEFS.MEMO.OF LAW IN OPPOSITION TO THE APPLICATION OF PLT. ALLIANCE GAMING CORP.FOR EXPEDITED DISCOVERY WITH RESPECT TO ACCESS TO DUE DILIGENCE INFORMATION CONCERNING DEF.BALLY GAM- ING INTERNATIONAL,INC. - FILED |
| DOCKET NO 42<br>ENTERED 09-AUG-95<br>DUE<br>TYPE/STATUS / | MEMO.OF LAW OF DEF.WMS INDUSTRIES INC IN OPPOSITION TO MOTION OF PLT.FOR EXPEDITED DISCOVERY WITH RESPECT TO ACCESS TO DUE DILIGENCE INFORMATION CONCERNING DEF.BALLY GAMING INTERNATION- AL,INC. - FILED           |
| DOCKET NO 43<br>ENTERED 09-AUG-95<br>DUE<br>TYPE/STATUS / | AFFIDAVIT OF MARTIN NUSSBAUM,III - FILED  |
| DOCKET NO 44<br>ENTERED 10-AUG-95<br>DUE<br>TYPE/STATUS / | LTR TO V.C.JACOBS FROM DAVID J.TEKLITS DTD.08-09-95 - FILED   |
| DOCKET NO 45<br>ENTERED 10-AUG-95<br>DUE<br>TYPE/STATUS / | LTR TO V.C.JACOBS FROM MICHAEL A.PITTENGER DTD.08-10-95 - FIL   |
| DOCKET NO 46<br>ENTERED 10-AUG-95<br>DUE<br>TYPE/STATUS / | NOTICE OF MOTION,MOTION & ORDER FOR ADMISSION PRO HAC VICE SIGNED BY V.C.JACOBS DTD.08-10-95,(KEVIN J.O'BRIEN) - FILED  |

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| DOCKET NO 47<br>ENTERED 10-AUG-95<br>DUE<br>TYPE/STATUS / | NOTICE OF MOTION,MOTION & ORDER FOR ADMISSION PRO HAC<br>VICE SIGNED BY V.C.JACOBS DTD.08-10-95,(CLAUDE .TUSK) - FILED   |
| DOCKET NO 48<br>ENTERED 11-AUG-95<br>DUE<br>TYPE/STATUS / | DEFS.PRE-TRIAL MEMO.IN SUPPORT OF THEIR REQUEST FOR THE<br>FIXING OF OCTOBER 11,1995 AS THE MEETING DATE - FILED   |
| DOCKET NO 49<br>ENTERED 14-AUG-95<br>DUE<br>TYPE/STATUS / | PRE-TRIAL MEMO.OF PLT.ALLIANCE GAMING CORP - FILED   |
| DOCKET NO 50<br>ENTERED 14-AUG-95<br>DUE<br>TYPE/STATUS / | LTR.OPINION FROM V.C.JACOBS DTD.08-11-95,RE:BALLY'S APPLICA-<br>TION TO POSTPONE THE 211 HEARING IS DENIED,PLTS.APPLICATION<br>FOR EXPEDITED DISCOVERY OF BALLY'S "DUE<br>DILIGENCE"INFORMATION IS DENIED,IT IS SO ORDERED - FILED |
| DOCKET NO 51<br>ENTERED 14-AUG-95<br>DUE<br>TYPE/STATUS / | NOTICE OF MOTION,MOTION IN LIMINE TO EXCLUDE TESTIMONY   |
| DOCKET NO 52<br>ENTERED 05-SEP-95<br>DUE<br>TYPE/STATUS / | STIP.& PROP.ORDER TO EXTEND TIME TO 09-11-95 ORDER SIGNED BY<br>V.C.JACOBS DTD.09-06-95  |
| DOCKET NO 53<br>ENTERED 11-SEP-95<br>DUE<br>TYPE/STATUS / | ANSWER (TO COMPLAINT) (BALLY & IND.DEFS.EXCEPT "WMS") -<br>FILED   |
| DOCKET NO 54<br>ENTERED 11-SEP-95<br>DUE<br>TYPE/STATUS / | ANSWER ("WMS") (LAWRENCE C.ASHBY ATTY.FOR DEF.) - FILED  |
| DOCKET NO 55<br>ENTERED 20-SEP-95<br>DUE<br>TYPE/STATUS / | NOTICE OF SERVICE (RESPONSE OF WMS INDUSTRIES,INC TO PLTS.<br>SECOND REQUEST FOR PRODUCTION OF DOCUMENTS) - FILED  |
| DOCKET NO 56<br>ENTERED 20-SEP-95<br>DUE<br>TYPE/STATUS / | NOTICE OF SERVICE (DEF.WMS INDUSTRIES,INC'S RESPONSE TO PLT.<br>ALLIANCE GAMING CORP'S FIRST SET OF INTERROGATORIES) - FILED   |
| DOCKET NO 57<br>ENTERED 20-SEP-95<br>DUE<br>TYPE/STATUS / | FIRST AMENDED ANSWER - FILED   |

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| DOCKET NO 58<br>ENTERED 03-OCT-95<br>DUE<br>TYPE/STATUS /    | NOTICE OF SERVICE (DEF.WMS INDUSTRIES INC'S RESPONSES & OBJECTIONS TO PLTS.FIRST REQUEST FOR PRODUCTION OF DOCUMENTS)                         |
| DOCKET NO 59<br>ENTERED 19-OCT-95<br>DUE<br>TYPE/STATUS /    | NOTICE OF MOTION,MOTION & PROP.ORDER FOR VOLUNTARY DISMISSAL FOR ALL DEFNS.EXCEPT WMS INDUSTRIES,INC. ORDER SIGNED BY V.C.JACOBS DTD.10-24-95 |
| DOCKET NO 59<br>ENTERED 26-FEB-97<br>DUE<br>TYPE/STATUS 50 / | STATUS LTR. FROM DAVID J. TEKLITS, ESQ.   |
| DOCKET NO 59<br>ENTERED 27-FEB-97<br>DUE<br>TYPE/STATUS 50 / | STATUS LTR. FROM LAWRENCE C. ASHBY, ESQ. STATUS LTR. FROM STEPHEN C. NORMAN, ESQ.   |
| DOCKET NO 60<br>ENTERED 20-MAR-97<br>DUE<br>TYPE/STATUS /    | MEMO TO REGISTER FROM KEN LAGOWSKI,RE:CASE DISMISSED PER CALL OF THE CALENDAR - FILED   |

**EXHIBIT J**

SUPERIOR COURT - KENT COUNTY  
AS OF 06/15/2006

PAGE 1

02C-11-007  
FILED November 04, 2002 PERSONAL INJURY AUTO  
JUDGE: JTV ARBITRATION: YOUNG ROBERT B.  
STATUS: CLO E-FILED: JURY TRIAL

LAZZERI JAMES JAY CINDY L. MUTTER  
LAZZERI JAMES JAY TIMOTHY MUTTER  
-- VS --  
LEES GEORGE THOMAS III MICHAEL P. NICKOLICH  
DENHAM DAVID ALLEN DL PETERSON TRUST  
ALLIANCE GAMING CORPORATION

- 11/04/2002 1 INITIAL COMPLAINT  
(PERSONAL INJURY - AUTO)  
(J LAZZERI) JVC 11/6/02
- 11/06/2002 2 SUMMONS SENT TO KENT COUNTY SHERIFF FOR SERVICE ON  
MICHAEL P. NICKOLICH AND ALLIANCE GAMING CORPORATION  
SUMMONS SENT TO NCCO SHERIFF FOR SERVICE ON  
DL PETERSON TRUST  
JVC 11/6/02
- 11/08/2002 4 WRIT RETURNED  
SERVED PERSONALLY MICHAEL P. NICKOLICH  
ON 11/7/02  
(J HIGDON) JVC 11/15/02
- 11/09/2002 3 WRIT RETURNED  
SERVED ALLIANCE GAMING CORPORATION BY SERVING  
REGISTERED AGENT ON 11/7/02  
(J HIGDON) JVC 11/15/02
- 11/18/2002 5 WRIT RETURNED  
SERVED DL PETERSON TRUST BY SERVING  
REGISTERED AGENT ON 11/13/02  
(M WALSH) JVC 11/25/02
- 03/24/2003 6 ENTRY OF APPEARANCE OF  
GEORGE T LEEES, III, ESQ, AND DAVID A DENAHM, ESQ  
ON BEHALF OF DEFENDANTS ALLIANCE GAMING CORPORATION  
AND MICHAEL P NICKOLICH  
(G LEES/D DENHAM) JVC 3/25/03
- 03/24/2003 7 NOTICE OF RECORDS DEPOSITION OF PMA MANAGEMENT  
CORPORATION AND TROER SOLUTIONS, INC  
ON 4/10/03  
(D DENHAM) JVC 3/25/03
- 03/27/2003 8 NOTICE OF RECORDS DEPOSITION ON 4/14/03 OF  
KENT GENERAL HOSPITAL, DR BERNARD HAIMOWITZ, DR TONY  
CUCUZZELLA, DR GHASSEM BAKILI, FIRST STATE  
ORTHOPAEDICS, DR ALBERT IANNUCCI, PHYSICAL THERAPY  
SERVICES, DR ERROL GER, DR WILLIAM EGAN, DR BIKASH  
BOSE, DR CHARLES PAULLISKY, CHRISTIANA CARE,  
REHABILITATION ASSOCIATES, ALLERGIST

SUPERIOR COURT - KENT COUNTY  
AS OF 06/15/2006

PAGE 2

02C-11-007

- ASSOCIATES, DR RICHARD FISCHER, DR JOHN O'NEILL,  
DR JOHN ANTICAGLIA, DR JAMES WADDELL,  
WILMINGTON HOSPITAL, DELAWARE SPINE CENTER  
(G LEES) JVC 3/31/03
- |            |    |  |
|------------|----|--|
| 03/31/2003 | 9  | MICHAEL P. NICKOLICH AND ALLIANCE GAMING<br>CORPORATION'S ANSWER TO COMPLAINT<br>(G LEES) JVC 4/1/03   |
| 03/31/2003 | 10 | DEFENDANT MICHAEL P NICKOLICH AND ALLIANCE GAMING<br>CORPORATION'S ANSWERS TO INTERROGATORIES<br>(G LEES) JVC 4/1/03                                       |
| 04/07/2003 | 11 | NOTICE OF RECORDS DEPOSITION OF STATE FARM<br>INSURANCE ON 4/24/03<br>(G LEES) JVC 4/8/03  |
| 06/10/2003 | 12 | ARBITRATION LETTER SENT ON 06/10/2003<br>ARBITRATOR ROBERT B YOUNG<br>JVC 6/11/03  |
| 06/30/2003 | 13 | NOTICE OF RECORDS DEPOSITION ON 7/16/04 OF<br>DR STEPHEN GROSSINGER, DR MATTHEW EPPLEY,<br>DR LEONARD SELTZER, PAPASTAVROS<br>(G LEES) JVC 7/1/03          |
| 08/06/2003 | 14 | NOTICE OF RECORDS DEPOSITION OF STATE FARM MUTUAL<br>AUTOMOBILE INSURANCE COMPANY ON 8/22/03<br>(G LEES) JVC 8/7/03  |
| 09/24/2003 | 15 | NOTICE OF DEPOSITION OF<br>STATE FARM MUTUAL AUTOMOBILE INSURANCE COMPANY<br>AND NATIONWIDE MUTUAL INSURANCE COMPANY<br>ON 10/7/03<br>(G LEES) JVC 10/7/03 |
| 10/07/2003 | 16 | NOTICE OF RECORDS DEPOSITION ON 10/24/03<br>(G LEES)<br>TBH  |
| 12/02/2003 | 17 | NOTICE OF RECORDS DEPOSITION OF NATIONWIDE INSURANCE<br>ON 12/8/03<br>(G LEES) JVC 12/15/03  |
| 01/07/2004 | 18 | STIPULATION OF DISMISSAL WITH PREJUDICE<br>(J LAZZERI/G LEES) JVC 1/8/04   |

## **EXHIBIT K**

1 PAUL R. HEJMANOWSKI  
2 Nevada Bar No. 94  
3 GREGORY R. GEMIGNANI  
4 Nevada Bar No. 7346  
5 LIONEL SAWYER & COLLINS  
6 1700 Bank America Plaza  
7 300 S. Fourth Street  
8 Las Vegas, NV 89101  
9 Telephone: (702) 383-8888  
10 Facsimile: (702) 383-8845

FILED - RECEIVED  
CLERK'S OFFICE, U.S. DISTRICT COURT  
FOR THE DISTRICT OF NEVADA

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U.S. DISTRICT COURT  
CLERK'S OFFICE, LAS VEGAS

BY \_\_\_\_\_ DEPUTY

11 MARK A. SAMUELS  
12 DAVID B. MURPHY  
13 BRETT J. WILLIAMSON  
14 NATHANIEL L. DILGER  
15 O'MELVENY & MYERS LLP  
16 610 Newport Center Drive, 17<sup>th</sup> Floor  
17 Newport Beach, CA 92660-6429  
18 Telephone: (949) 760-9600  
19 Facsimile: (949) 823-6994

20 Attorneys for Plaintiff  
21 IGT

22  
23  
24  
25  
26 UNITED STATES DISTRICT COURT  
27 DISTRICT OF NEVADA

28 IGT, a Nevada corporation,

CV-S-04-1676-RCJ-RJJ

Plaintiff,

v.

ALLIANCE GAMING CORPORATION, a  
Nevada corporation; BALLY GAMING  
INTERNATIONAL, INC., a Delaware  
corporation; and BALLY GAMING, INC.,  
a Nevada corporation d/b/a BALLY  
GAMING & SYSTEMS,

Defendants.

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32  
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35  
36 COMPLAINT FOR PATENT INFRINGEMENT

37  
38 JURY DEMAND

1 For its claims for relief herein, plaintiff IGT alleges as follows:

2 **JURISDICTION AND VENUE**

- 3 1. This is a civil action for patent infringement arising under the Patent Laws  
4 of the United States, 35 U.S.C. § 1 *et seq.*
- 5 2. This court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331  
6 and 1338(a).
- 7 3. This court has personal jurisdiction over the defendants.
- 8 4. Venue is proper in this District pursuant to 28 U.S.C. §§ 1391(b) and  
9 1400(b).

10 **PARTIES**

11 5. IGT is a corporation organized and existing under and by virtue of the laws  
12 of the State of Nevada, and has its principal place of business at 9295 Prototype Drive,  
13 Reno, Nevada 89511.

14 6. On information and belief, defendant Alliance Gaming Corporation  
15 (“Alliance”) is a corporation organized and existing under and by virtue of the laws of the  
16 State of Nevada, having a principal place of business at 6601 Bermuda Road, Las Vegas,  
17 Nevada 89119.

18 7. On information and belief, defendant Bally International, Inc., is a  
19 corporation organized and existing under and by virtue of the laws of the State of  
20 Delaware, having a principal place of business at 6601 Bermuda Road, Las Vegas,  
21 Nevada 89119.

22 8. On information and belief, defendant Bally Gaming, Inc. is a corporation  
23 organized and existing under and by virtue of the laws of the State of Nevada, having a  
24 principal place of business at 6601 Bermuda Road, Las Vegas, Nevada 89119. On  
25 information and belief, Bally Gaming, Inc. is, and at all times material hereto was, doing  
26 business as “Bally Gaming & Systems.”

27 9. On information and belief, at all times material hereto, each of the  
28 defendants was acting as the agent of the others, together and in concert through “Bally

LIONEL SAWYER  
& COLLINS  
ATTORNEYS AT LAW  
700 BANK OF AMERICA PLAZA  
300 SOUTH FOURTH ST.  
LAS VEGAS,  
NEVADA 89101  
(702) 733-8888

1      Gaming & Systems," an entity held out to the public as an operating division of  
2      defendant Alliance.

**COUNT I**

**(Infringement of U.S. Patent No. 6,827,646)**

5           10. IGT repeats and realleges the allegations in paragraphs 1-9 as though fully  
6 set forth herein.

7        11. IGT is the owner of all right, title and interest in and to U.S. Patent No.  
8                  6,827,646 ("the '646 Patent"), entitled "SLOT MACHINE WITH AN ADDITIONAL  
9                  PAYOUT INDICATOR," duly and legally issued by the United States Patent &  
10                 Trademark Office on December 7, 2004. A true and correct copy of the '646 Patent is  
11                 attached hereto as Exhibit 1.

12. Defendants have infringed and are currently infringing, inducing  
13 infringement of, and/or contributing to the infringement of one or more claims of the  
14 ‘646 Patent, at a minimum, by making, using, selling, offering to sell, advertising,  
15 leasing, offering to lease, and/or marketing certain gaming machines, including but not  
16 limited to their “Lucky Wheel,” “Monte Carlo,” “In the Money,” “Cartoon Jackpots,”  
17 “Cash Wheel,” “Cash for Life Wheel,” “Get Lucky” and “Top Box” gaming machines.

18        13. Defendants have caused and will continue to cause IGT substantial damage  
19 and irreparable injury by virtue of their continuing infringement of the '646 Patent. IGT  
20 will suffer further damage and irreparable injury unless and until defendants are enjoined  
21 by this Court from continuing such infringement.

**COUNT II**

**(Infringement of U.S. Patent No. 5,848,932)**

24 14. IGT repeats and realleges the allegations in paragraphs 1-9 and 11-13 as  
25 though fully set forth herein.

26        15. IGT is the owner of all right, title and interest in and to U.S. Patent No.  
27        5,848,932 ("the '932 Patent"), entitled "Method of Playing Game and Gaming Games  
28        with an Additional Payout Indicator," duly and legally issued by the United States Patent

1 & Trademark Office on December 15, 1998. A true and correct copy of the '932 Patent  
 2 is attached hereto as Exhibit 2.

3       16. Defendants have infringed and are currently infringing, inducing  
 4 infringement of, and/or contributing to the infringement of one or more claims of the  
 5 '932 Patent, at a minimum, by making, using, selling, offering to sell, advertising,  
 6 leasing, offering to lease, and/or marketing certain gaming machines, including but not  
 7 limited to their "Lucky Wheel," "Monte Carlo," "In the Money," "Cartoon Jackpots,"  
 8 "Cash Wheel," "Cash for Life Wheel," "Get Lucky" and "Top Box" gaming machines.

9       17. Defendants have caused and will continue to cause IGT substantial damage  
 10 and irreparable injury by virtue of their continuing infringement of the '932 Patent. IGT  
 11 will suffer further damage and irreparable injury unless and until defendants are enjoined  
 12 by this Court from continuing such infringement.

13       18. On information and belief, defendants' infringement as alleged above has  
 14 been and continues to be willful, and has been carried out with full knowledge of the '932  
 15 patent and IGT's rights therein.

### COUNT III

#### (Infringement of U.S. Patent No. 5,788,573)

19       19. IGT repeats and realleges the allegations in paragraphs 1-9, 11-13 and 15-  
 18 as though fully set forth herein.

20       20. IGT is the owner of all right, title and interest in and to U.S. Patent No.  
 21 5,788,573 ("the '573 Patent"), entitled "Electronic Game Method and Apparatus with  
 22 Hierarchy of Simulated Wheels," duly and legally issued by the United States Patent &  
 23 Trademark Office on August 4, 1998. A true and correct copy of the '573 patent is  
 24 attached hereto as Exhibit 3.

25       21. Defendants have infringed and are currently infringing, inducing  
 26 infringement of, and/or contributing to the infringement of one or more claims of the  
 27 '573 Patent, at a minimum, by making, using, selling, offering to sell, advertising,  
 28 leasing, offering to lease, and/or marketing certain gaming machines, including but not

1 limited to their "Quartermillion\$" linked progressive gaming machines.

2 22. Defendants have caused and will continue to cause IGT substantial damage  
3 and irreparable injury by virtue of their continuing infringement of the '573 Patent. IGT  
4 will suffer further damage and irreparable injury unless and until defendants are enjoined  
5 by this court from continuing such infringement.

6 23. On information and belief, defendants' infringement as alleged above has  
7 been and continues to be willful, and has been carried out with full knowledge of the '573  
8 patent and IGT's rights therein.

9 **COUNT IV**

10 (Infringement of U.S. Patent No. 5,722,891)

11 24. IGT repeats and realleges the allegations in paragraphs 1-9, 11-13, 15-18  
12 and 20-23 as though fully set forth herein.

13 25. IGT is the owner of all right, title and interest in and to U.S. Patent No.  
14 5,722,891 ("the '891 Patent"), entitled "Slot Machine Having Two Distinct Sets of  
15 Reels," duly and legally issued by the United States Patent & Trademark Office on  
16 March 3, 1998. A true and correct copy of the '891 patent is attached hereto as Exhibit 4.

17 26. Defendants have infringed and are currently infringing, inducing  
18 infringement of, and/or contributing to the infringement of one or more claims of the  
19 '891 Patent, at a minimum, by making, using, selling, offering to sell, advertising,  
20 leasing, offering to lease, and/or marketing certain gaming machines, including but not  
21 limited to their various "Frenzy" gaming machines.

22 27. Defendants have caused and will continue to cause IGT substantial damage  
23 and irreparable injury by virtue of their continuing infringement of the '891 Patent. IGT  
24 will suffer further damage and irreparable injury unless and until defendants are enjoined  
25 by this court from continuing such infringement.

26 28. On information and belief, defendants' infringement as alleged above has  
27 been and continues to be willful, and has been carried out with full knowledge of the '891  
28 patent and IGT's rights therein.

**COUNT V**

**(Infringement of U.S. Patent No. 6,712,698)**

29. IGT repeats and realleges the allegations in paragraphs 1-9, 11-13, 15-18, 20-23 and 25-28 as though fully set forth herein.

30. IGT is the owner of all right, title and interest in and to U.S. Patent No. 6,712,698 ("the '698 Patent") entitled "Game Service Interfaces for Player Tracking Touch Screen Display," duly and legally issued by the United States Patent & Trademark Office on March 30, 2004. A true and correct copy of the '698 patent is attached hereto as Exhibit 5.

31. Defendants have infringed and are currently infringing, inducing infringement of, and/or contributing to the infringement of one or more claims of the '698 Patent, at a minimum, by making, using, selling, offering to sell, advertising, leasing, offering to lease, and/or marketing certain gaming machines, including but not limited to gaming machines featuring the "iVIEW" touch screen display device.

32. Defendants have caused and will continue to cause IGT substantial damage and irreparable injury by virtue of their continuing infringement of the '698 Patent. IGT will suffer further damage and irreparable injury unless and until defendants are enjoined by this court from continuing such infringement.

33. On information and belief, defendants' infringement as alleged above has been and continues to be willful, and has been carried out with full knowledge of the '698 patent and IGT's rights therein.

**COUNT VI**

**(Infringement of U.S. Patent No. 6,722,985)**

34. IGT repeats and realleges the allegations in paragraphs 1-9, 11-13, 15-18, 20-23, 25-28 and 30-33 as though fully set forth herein.

35. IGT is the owner of all right, title and interest in and to U.S. Patent No. 6,722,985 ("the '985 Patent") entitled "Universal Player Tracking System," duly and legally issued by the United States Patent & Trademark Office on April 20, 2004. A true

and correct copy of the '985 patent is attached hereto as Exhibit 6.

36. Defendants have infringed and are currently infringing, inducing infringement of, and/or contributing to the infringement of one or more claims of the '985 Patent, at a minimum, by making, using, selling, offering to sell, advertising, leasing, offering to lease, and/or marketing certain gaming machines, including but not limited to gaming machines featuring the "iVIEW" touch screen display device.

37. Defendants have caused and will continue to cause IGT substantial damage and irreparable injury by virtue of their continuing infringement of the '985 Patent. IGT will suffer further damage and irreparable injury unless and until defendants are enjoined by this court from continuing such infringement.

38. On information and belief, defendants' infringement as alleged above has been and continues to be willful, and has been carried out with full knowledge of the '985 patent and IGT's rights therein.

## **PRAYER FOR RELIEF**

WHEREFORE, IGT prays for the entry of judgment as follows:

A. Declaring that defendants have infringed the '646 Patent, the '932 Patent, the '573 Patent, the '891 Patent, the '698 Patent and the '985 Patent.

B. Preliminarily and permanently enjoining and restraining defendants, their officers, directors, agents, servants, employees, licensees, successors, assigns, those in active concert and participation with them, and all persons acting on their behalf or within their control from infringing, inducing others to infringe, or contributing to any infringement of the '646 Patent, the '932 Patent, the '573 Patent, the '891 Patent, the '698 Patent and the '985 Patent, pursuant to 35 U.S.C. § 283.

**C. Requiring defendants to:**

(1) Send a copy of any decision in this case in favor of IGT to each person or entity to whom defendants sold, leased, or otherwise distributed infringing products, informing such persons or entities of the judgment and that the sale or solicited commercial transaction was wrongful.

(2) Take all necessary steps within their power to recall and collect from all persons and entities any and all infringing products that were made, sold, leased, or otherwise distributed by defendants or anyone acting on their behalf.

(3) File with the court and serve upon IGT, within 30 days after entry of final judgment in this case, a report in writing and subscribed under oath setting forth in detail the form and manner in which defendants have complied with the court's orders as prayed for.

D. Awarding IGT its patent infringement damages and pre-judgment interest pursuant to 35 U.S.C. § 284.

E. Trebling the damages award because of the willful nature of the infringement.

F. Declaring that this is an exceptional case under 35 U.S.C. § 285 and awarding IGT its costs, expenses and attorneys' fees in this action.

G. Granting IGT such other and further relief as justice and equity may require.

DATED: December 7, 2004.

Paul R. H jmanowski, Nevada Bar No. 94  
Gregory R. Gemignani, Nevada Bar No. 7346  
**LIONEL SAWYER & COLLINS**  
1700 Bank America Plaza  
300 S. Fourth Street  
Las Vegas, Nevada 89101  
Telephone: (702) 383-8888  
Facsimile: (702) 383-8845

Mark A. Samuels  
David B. Murphy  
Brett J. Williamson  
Nathaniel L. Dilger  
O'MELVENY & MYERS LLP  
610 Newport Center Drive, 17<sup>th</sup> Floor  
Newport Beach, California 92660-6429  
Telephone: (949) 760-9600  
Facsimile: (949) 823-6994

Attorneys for Plaintiff  
IGT

**JURY DEMAND**

Pursuant to Fed. R. Civ. P. 38(b), plaintiff IGT hereby requests a trial by jury on all issues so triable under the law.

DATED: December 7, 2004.

Paul R. Hejmanowski, Nevada Bar No. 94  
Gregory R. Gemignani, Nevada Bar No. 7346  
**LIONEL SAWYER & COLLINS**  
1700 Bank America Plaza  
300 S. Fourth Street  
Las Vegas, Nevada 89101  
Telephone: (702) 383-8888  
Facsimile: (702) 383-8845

Mark A. Samuels  
David B. Murphy  
Brett J. Williamson  
Nathaniel L. Dilger  
**O'MELVENY & MYERS LLP**  
610 Newport Center Drive, 17<sup>th</sup> Floor  
Newport Beach, California 92660-6429  
Telephone: (949) 760-9600  
Facsimile: (949) 823-6994

Attorneys for Plaintiff  
IGT

LIONEL SAWYER  
& COLLINS  
ATTORNEYS AT LAW  
'00 BANK OF AMERICA PLAZA  
100 SOUTH FOURTH ST.  
LAS VEGAS,  
NEVADA 89101  
(702) 325-8888

**EXHIBIT L**



US006827646B2

(12) United States Patent  
Adams(10) Patent No.: US 6,827,646 B2  
(45) Date of Patent: \*Dec. 7, 2004

(54) SLOT MACHINE WITH AN ADDITIONAL PAYOUT INDICATOR

4,573,681 A 3/1986 Okada ..... 273/143 R  
4,624,459 A 11/1986 Kaufman ..... 273/143 R  
4,660,833 A 4/1987 Dickinson et al. ..... 273/143 R

(75) Inventor: William R. Adams, Las Vegas, NV (US)

(List continued on next page.)

(73) Assignee: IGT, Reno, NV (US)

## FOREIGN PATENT DOCUMENTS

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

|    |              |         |
|----|--------------|---------|
| AU | 39332/78     | 3/1980  |
| AU | 75789/81     | 9/1981  |
| AU | 21070/92     | 8/1992  |
| AU | 79361/91     | 10/1992 |
| AU | 80248/91     | 12/1992 |
| DE | 30 35 898 A1 | 4/1982  |
| DE | 30 35 947 A1 | 5/1982  |
| DE | 31 39 587 A1 | 4/1983  |
| DE | 32 13 400 A1 | 10/1983 |

(List continued on next page.)

(21) Appl. No.: 10/243,254

## OTHER PUBLICATIONS

(22) Filed: Sep. 13, 2002

Bueschel, Richard M., "Lemons, Cherries and Bell-Fruit Gum," published by Royal Bell Books, Denver, Colorado, cover, p. iii, 23 and 31-48 describing "Wheels of Fortune" slot machines from 1895-1904.

(65) Prior Publication Data

US 2003/0114216 A1 Jun. 19, 2003

Fey, Marshall, "Slot Machines—A Pictorial History of the First 100 Years," Fourth Edition, published by Liberty Belle Books, 1994, cover and p. 1, 6, 17, 19-20, 30-32, 34, 68, 70-73, 77-79, 86-88, 90, 92-93, 96, 98-99, 128, 150, 154, 158-159, 230, 232-234 and 237.

(List continued on next page.)

## Related U.S. Application Data

(63) Continuation of application No. 09/169,666, filed on Oct. 9, 1998, now abandoned, which is a continuation of application No. 08/907,764, filed on Aug. 8, 1997, now Pat. No. 5,848,932, and a continuation-in-part of application No. 08/311,783, filed on Sep. 23, 1994, now abandoned.

(51) Int. Cl.<sup>7</sup> G07F 17/34(52) U.S. Cl. 463/20; 463/25; 273/143 R;  
273/138.1; 273/138.2(58) Field of Search 273/143 R, 138.1,  
273/138.2, 142 R, 142 H; 463/20, 16, 1

## (56) References Cited

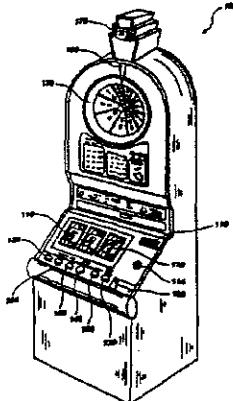
## U.S. PATENT DOCUMENTS

|             |         |                     |           |
|-------------|---------|---------------------|-----------|
| 3,819,186 A | 6/1974  | Hintersicker .....  | 273/138 A |
| 3,975,022 A | 8/1976  | Figueroa .....      | 273/141 A |
| 4,095,795 A | 6/1978  | Sexton et al. ....  | 273/143 R |
| 4,149,728 A | 4/1979  | Thompson .....      | 273/274   |
| 4,321,673 A | 3/1982  | Hawwass et al. .... | 364/412   |
| 4,448,419 A | 5/1984  | Telnaes .....       | 273/143 R |
| 4,492,378 A | 1/1985  | Williams .....      | 273/142   |
| 4,560,171 A | 12/1985 | Anthony .....       | 273/269   |

## (57) ABSTRACT

Gaming devices comprising a standard gaming unit, e.g., three reels, and a discernible additional payout indicator, e.g., a rotatable wheel. A preferred bonus payout indicator is clearly visible by the player and is actuatable when the reels of the slot machine stop on certain predetermined indicia. A preferred embodiment further comprises a payout multiplier which displays a plurality of values by which a payout may be multiplied.

42 Claims, 4 Drawing Sheets



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## U.S. PATENT DOCUMENTS

|             |         |                         |            |    |              |         |
|-------------|---------|-------------------------|------------|----|--------------|---------|
| 4,669,731 A | 6/1987  | Clarke .....            | 273/143 R  | DE | 42 32 762 A1 | 3/1994  |
| 4,700,948 A | 10/1987 | Okada .....             | 273/143 R  | DE | 43 01 855 A1 | 5/1994  |
| 4,711,451 A | 12/1987 | Pajak et al. .....      | 273/143 R  | EP | 0 219 305 A2 | 7/1994  |
| 4,732,386 A | 3/1988  | Raynel .....            | 273/142 H  | EP | 0 281 402 A2 | 10/1986 |
| 4,756,531 A | 7/1988  | DiRe et al. .....       | 273/138 A  | ES | 0 338 743    | 3/1988  |
| 4,858,932 A | 8/1989  | Keane .....             | 463/21     | ES | 529535       | 10/1989 |
| 4,871,171 A | 10/1989 | Rivero .....            | 273/138 A  | ES | 529536       | 6/1983  |
| 4,906,005 A | 3/1990  | Manabe .....            | 273/142 R  | ES | 2006400      | 6/1983  |
| 4,991,848 A | 2/1991  | Greenwood et al. ....   | 273/143 R  | ES | 2018982      | 4/1989  |
| 5,042,810 A | 8/1991  | Williams .....          | 273/142    | ES | 2013885      | 12/1989 |
| 5,050,881 A | 9/1991  | Nagao .....             | 273/143 R  | ES | 2016168      | 6/1990  |
| 5,067,712 A | 11/1991 | Georgilas .....         | 273/143 R  | ES | 2047436      | 10/1990 |
| 5,096,196 A | 3/1992  | Gutknecht et al. ....   | 273/142 HA | ES | 2047437      | 2/1994  |
| 5,102,134 A | 4/1992  | Smylyh .....            | 273/138 A  | FR | 1 474 617    | 2/1967  |
| 5,102,135 A | 4/1992  | Addiechi .....          | 273/142 E  | GB | 1242298      | 8/1971  |
| 5,106,091 A | 4/1992  | Comito .....            | 273/142 H  | GB | 1428157      | 3/1976  |
| 5,152,529 A | 10/1992 | Okada .....             | 273/143 R  | GB | 1444085      | 7/1976  |
| 5,154,421 A | 10/1992 | Hamao .....             | 273/143 R  | GB | 1476848      | 12/1992 |
| 5,167,413 A | 12/1992 | Fulton .....            | 273/85 CP  | GB | 2066991      | 6/1981  |
| 5,184,821 A | 2/1993  | Korenek .....           | 273/138 A  | GB | 2072395      | 3/1981  |
| 5,188,363 A | 2/1993  | Marnell, II et al. .... | 273/85 CP  | GB | 2083936      | 3/1982  |
| 5,205,555 A | 4/1993  | Hamao .....             | 273/143 R  | GB | 2084371      | 10/1990 |
| 5,209,479 A | 5/1993  | Nagao et al. ....       | 273/143 R  | GB | 2086632      | 4/1982  |
| 5,219,167 A | 6/1993  | Hamano .....            | 273/143 R  | GB | 2096376      | 5/1982  |
| 5,259,616 A | 11/1993 | Bergmann .....          | 273/138 A  | GB | 2098779      | 10/1982 |
| 5,292,127 A | 3/1994  | Kelly et al. ....       | 273/138 R  | GB | 2101380      | 1/1983  |
| 5,342,049 A | 8/1994  | Wichinsky et al. ....   | 273/119 R  | GB | 2105891      | 3/1983  |
| 5,344,145 A | 9/1994  | Chadwick et al. ....    | 273/138 A  | GB | 2106685      | 2/1994  |
| 5,362,052 A | 11/1994 | Kubatsch .....          | 273/145 R  | GB | 2133994      | 4/1984  |
| 5,380,008 A | 1/1995  | Mathis et al. ....      | 273/143 R  | GB | 2137392      | 8/1984  |
| 5,393,057 A | 2/1995  | Marnell, II .....       | 273/85     | GB | 2152262      | 10/1984 |
| 5,393,061 A | 2/1995  | Manship et al. ....     | 273/143 R  | GB | 2153572      | 7/1985  |
| 5,401,024 A | 3/1995  | Simunek .....           | 273/138 A  | GB | 2169737      | 3/1985  |
| 5,411,271 A | 5/1995  | Mirando .....           | 273/434    | GB | 2170636      | 7/1986  |
|             |         |                         |            | GB | 2170937      | 8/1986  |
|             |         |                         |            | GB | 2170938      | 8/1986  |
|             |         |                         |            | GB | 2180682      | 4/1987  |

## FOREIGN PATENT DOCUMENTS

|    |              |         |    |             |                    |
|----|--------------|---------|----|-------------|--------------------|
| DE | 33 34 474 A1 | 4/1984  | GB | 2181589     | 4/1987             |
| DE | 34 15 114 A1 | 10/1985 | GB | 2182186     | 5/1987             |
| DE | 34 39 635 A1 | 4/1986  | GB | 2191030     | 12/1987            |
| DE | 34 39 636 A1 | 4/1986  | GB | 2 193 025   | 1/1988             |
| DE | 34 38 573 A1 | 5/1986  | GB | 2197974     | 6/1988             |
| DE | 34 44 148 A1 | 6/1986  | GB | 2201821     | 9/1988             |
| DE | 29 38 307 C3 | 7/1987  | GB | 2202984     | 273/143 R          |
| DE | 36 01 631 A1 | 7/1987  | GB | 2 204 436 A | 10/1988            |
| DE | 37 03 548 A1 | 3/1988  | GB | 2216322     | 11/1988            |
| DE | 36 38 099 A1 | 5/1988  | GB | 2210191     | 4/1989             |
| DE | 37 01 622 A1 | 8/1988  | GB | 2218558     | 6/1989             |
| DE | 30 44 243 C2 | 3/1989  | GB | 2222712     | 11/1989            |
| DE | 38 22 636 A1 | 1/1990  | GB | 2230373     | 3/1990             |
| DE | 38 25 183 A1 | 2/1990  | GB | 2242300     | 10/1990            |
| DE | 38 30 648 A1 | 3/1990  | GB | 2262642     | 9/1991             |
| DE | 38 31 740 A1 | 3/1990  | GB | 2273384     | 6/1993             |
| DE | 39 15 655 A1 | 11/1990 | JP | 59-193487   | 12/1984            |
| DE | 40 36 728 A1 | 5/1992  | JP | 62-253091   | 11/1987            |
| DE | 33 47 508 C2 | 3/1993  | JP | 5-131044    | 5/1993             |
| DE | 41 28 633 A1 | 3/1993  | JP | 5-131045    | 5/1993             |
| DE | 37 26 495 C2 | 4/1993  | JP | 5-131046    | 1/1993             |
| DE | 41 33 273 A1 | 4/1993  | JP | 5-285252    | 6/1993             |
| DE | 34 36 783 C2 | 7/1993  | JP | 6-2177      | 1/1994             |
| DE | 41 43 128 A1 | 7/1993  | JP | 6-7498      | 1/1994             |
| DE | 42 01 534 A1 | 7/1993  | JP | 6-190114    | 1/1994             |
| DE | 42 11 438 A1 | 10/1993 | JP | 6-254208    | 146.               |
| DE | 42 11 440 A1 | 10/1993 | JP |             | 9/1994             |
| DE | 42 11 443 A1 | 10/1993 | JP |             | OTHER PUBLICATIONS |
| DE | 43 31 257 A1 | 11/1993 |    |             |                    |
| DE | 42 20 132 A1 | 12/1993 |    |             |                    |
| DE | 42 26 091 A1 | 2/1994  |    |             |                    |
| DE | 42 26 874 A1 | 2/1994  |    |             |                    |
| DE | 42 31 086 A1 | 3/1994  |    |             |                    |

Geddes, Robert N., "Slot Machines on Parade," First Edition, Mead Publishing Company, Oct. 1980, cover and p. ii, 1-18, 20, 22-28, 30-31, 39, 41-49, 132, 135, 142-143 and 146.

## US 6,827,646 B2

Page 3

Topsy Turvy (IGT): Front page of IGT Slot Line magazine, Jul./Aug. 1990, and enlarged image of Topsy Turvy machine. Declaration of John F. Acres dated Aug. 11, 1999 filed in Civil Action No. CV-S-99-00245 and marked Exhibit D, pp. 1, 3-6 and 19, describing 1992 Bally Bonus Sevy apparatus.

Supplemental Declaration of John F. Acres dated May 6, 2000 filed in Civil Action No. CV-S-99-00245 and marked as Exhibit C, pp. 1-4, describing 1992 Bally Bonus Sevy apparatus.

Page 253 of transcript of deposition of John F. Acres on Nov. 11, 1999 describing 1992 Bally Bonus Sevy apparatus.

Court document #1: "Complaint for Patent Infringement, Breach of Covenant Not to Compete and Breach of Implied and Express Warranties".

Court document #38: "First Amended Answer and Counter-claims of Acres Gaming, Inc.".

Court document #62: "Acres' Opposition to Plaintiffs' Motion for a Preliminary Injunction".

Court document #176: "Plaintiffs' Motion for Leave to Supplement the Record regarding Plaintiffs' Motion for Summary Judgment on Defendant's Counterclaims for Correction of Inventorship".

Court document #178: "Transcript of Proceedings of Plaintiff's Motion on Defendant's Affirmative Defense of Inevitable Conduct and Plaintiff's Motion for Summary Judgment for Correction of Inventorship".

Pages 49-72 and 169-184 of transcript of deposition of William Adams taken Jun. 10, 1999 and Adams Deposition Exhibits 14-17 (the exhibits are the best quality copies available).

Pages 41-44 of transcript of deposition of Michael Mitchell taken Oct. 22, 1999.

Pages 1 and 118-121 of transcript of deposition of Mark Hettinger taken Nov. 3, 1999.

Pages 1-5, 62-125 and 278-281 of transcript of deposition of Steve Hyman taken Nov. 12, 1999 and Hyman Deposition Exhibits 6 and 22 (the exhibits are the quality copies available).

Complaint for Declaratory Judgment of Patent Noninfringement and Patent Invalidity dated Oct. 31, 2002 in Civil Action No. 02-1448.

"Defendants' Notice of Removal of Civil Action to Federal Court Pursuant to 28 USC §§ 1331, 1338, 1441, et. seq." Civil Action No. 99-698 and copy of complaint and complaint exhibits for Case No. 99-10125.

Opposition of Australian Appl. No. 733599: 8-page document entitled "The Claims Defining The Invention Are As Follows" (Australian claims 1-41).

Opposition of Australian Appl. No. 733599: 7-page document entitled "Statement of Grounds and Particulars Relating To Each Ground".

Opposition of Australian Appl. No. 733599: "Statutory Declaration of Robert John Poynter," pp. 1-7, and Annexes RJB-1 through RJB-11.

Opposition of Australian Appl. No. 733599: "Statutory Declaration of Ante Milic," pp. 1-9, and Annexes AM-1 through AM-14.

Opposition of Australian Appl. No. 733599: "Statutory Declaration of Philip Clive Crouch," pp. 1-13, and Annex PCC-2.

Opposition of Australian Appl. No. 58011/01: Claims being opposed.

Spanish Official Bulletin of Industrial Property, 1986, p. 6610, ANCHOR 18077, with English translation of abstract 193.376.

Spanish Official Bulletin of Industrial Property, Apr. 1, 1988, pp. 1491-1492, ANCHOR 18070-18071, with English translation of abstract 1000994 and 1000995.

Spanish Official Bulletin of Industrial Property, May 1, 1988, pp. 1977, ANCHOR 18069, with English translation of abstract 1001364.

Spanish Official Bulletin of Industrial Property, Mar. 1, 1989, pp. 1555-1556, ANCHOR 18061-18062, with English translation of abstract 1007715.

Spanish Official Bulletin of Industrial Property, Apr. 16, 1989, pp. 2610-2611, ANCHOR 18088-18089, with English translations of abstracts 1008483, 1008484.

Spanish Official Bulletin of Industrial Property, Feb. 16, 1994, p. 1089, ANCHOR 18085, with English translation of abstract 1025847.

Air Link (Omega): Document dated Aug. 30, 1980 showing Air Link machine, ANCHOR 15587.

Big 50 (Maygay): Document dated 1978 referring to "Big 50," ANCHOR 15709.

Bonus (Mills): Buechel, Richard M., "Slots" p. 142, published in 1978.

Cabaret (Barcres): Documents describing 1982 Cabaret game, 2 pages, ANCHOR 15649-15650.

Cash Drop (Gowepoint): Coin Slot, Dec. 1979, p. 26, ANCHOR 15589.

Cascade (BWB): Coin Slot, Feb. 8, 1985, p. 20, ANCHOR 15791.

Cascade (BWB): Description of 1985 Cascade game, ANCHOR 15790.

Casino Roulette (Maygay): EuroSlot, Oct. 1992, front page and additional page, ACRES 013923 and 013925.

Chase the Lady (BWB): Coin Slot, Nov. 4, 1988, p. 6, ANCHOR 15728.

Climax (Bell Fruit Manufacturing): Document showing 1982 Climax game, ANCHOR 15565.

Club Casino (Newby): 1990 document showing Club Casino game, ANCHOR 15576.

Club Monte Carlo (Bell-Fruit Manufacturing): Coin Slot, Jun. 22, 1984, p. 11, ANCHOR 15718.

Crusader (MDM Leisure): Coin Slot, Nov. 9, 1984, p. 6, ANCHOR 15586.

Dial (Mills): Bueschel, Richard M., "An Illustrated Guide to the 100 Most Collectible Trade Simulators," p. 83 (1978).

Eliminator (Maygay): Documents describing 1988 Eliminator game, 2 pages, ANCHOR 15653-15654.

Extra Line (JPM): EuroSlot, Sep. 1994, front page and additional page, ACRES 013907, 013909.

Faircast Wheel: Marshall Fey, "Slot Machines," p. 150 (1983).

Fortune Wheel (Project Coin): Coin Slot, Feb. 14, 1992, 1 page, ACRES 13949.

Fortune Wheel (Project Coin): Coin Slot, Apr. 10, 1992, 1 page, ACRES 13952.

Fortune Wheel (Project Coin): Jul. 27, 2000 letter from Michael Broaddus to Steven Daniels regarding 1992 Fortune Wheel game.

Fortune Wheel (Project Coin): JPEG images of 1992 Fortune Wheel game enclosed with Jul. 27, 2000 letter, 6 pages, Mvc-109s, Mvc-110s, Mvc-116s, Mvc-120s, Mvc-121s, Mvc-160s.

## US 6,827,646 B2

Page 4

- Fortune Wheel (Project Coin): 2-page facsimile dated Aug. 23, 2000 from Richard Booth to Mike Broaddus regarding 1993 Fortune Wheel game, ACRES 14006-14007, 1-page "Sales Invoice No. 9312007" for Fortune Wheel game, ACRES 013988, 1-page "Acknowledgement of Order," ACRES 013989, and 1-page "Advice/Dispatch Note," ACRES 013990.
- Fortune Wheel (Project Coin): Document entitled "Fortune Wheel—Instructions for Conversion" for 1993 Fortune Wheel game, ACRES 14008-14022.
- Futurity (Mills): Geddes, Robert M., "Slot Machines on Parade," p. 128, published Oct. 1980.
- Futurity (Mills): Bueschel, Richard M., "Slots 1," p. 136, published in 1978.
- Golden Shot (Subelectro): Coin Slot, Jan. 25, 1985, p. 20, ANCHOR 15720.
- Grand Royal (Jac van Ham): EuroSlot, Mar. 1994, front page and additional page, ACRES 013894 and 013897.
- Jokers Wild (JPM): EuroSlot, Jun. 1992, front page and additional page, ACRES 013916 and 013918.
- Lords and Jokers (Maygay): EuroSlot, Mar. 1994, front page and additional page, ACRES 013894 and 013896.
- Lucky Dip (Maygay): Documents describing 1984 Lucky Dip game, 2 pages, ANCHOR 15554 & 15556.
- Lucky Strike (Barcrest): Documents describing 1983 Lucky Strike game, 2 pages, ANCHOR 15655, 15656.
- Money Wheel (Brenco): Coin Slot, Jan. 13, 1979, 1 page, ANCHOR 15731.
- Number 1 (Bell-Fruit Manufacturing): Documents describing "Number 1" game, Nov. 1984, 3 pages, ANCHOR 15539, 15540, 15588.
- Pik A Win (Maygay): Document showing "Pik A Win" game, handwritten date of Sep. 14, 1977, ANCHOR 15708.
- Poundrush (JPM): Amusement Machine Guide, Jul./Aug. 1988, cover page and p. 15, 19, ANCHOR 15796, 15809, 15813.
- Reflex (Bell-Fruit Manufacturing): Coin Slot, Jan. 25, 1985, p. 20, ANCHOR 15720.
- Risk Disks (Bell-Fruit Manufacturing): Coin Slot, May 12, 1984, p. 24, ANCHOR 15558.
- Roulette (BTR): EuroSlot, Mar. 1994, front page and additional page, ACRES 013894 and 013896.
- Seven Up (Bell-Fruit Manufacturing): Document describing "Seven Up" game, documents refers to date of May 1987, ANCHOR 15553.
- Seven Up (Bell-Fruit Manufacturing): Document showing 1987 "Seven Up" game, ANCHOR 15555.
- Seven Up (Bell-Fruit Manufacturing): Coin Slot, May 8, 1987, pp. 40 and 41, ANCHOR 15732 and 15727.
- Silver Gambler (Ace Coin): Document describing "Silver Gambler" game, document refers to date of Jul. 1977, ANCHOR 15542.
- Silver Gambler (Ace Coin): Coin Slot, Apr. 23, 1977, p. 15, ANCHOR 15593.
- Silver Machine (Ace Coin): Documents describing "Silver Machine" game, Nov. 1981, 3 pages, ANCHOR 15548, 15549, 15595.
- Space Fruits (Omega): Coin Slot, Oct. 27, 1979, 1 page, ANCHOR 15730.
- Spin -A- Win (Bell-Fruit Manufacturing): Document dated Aug. 30, 1980 showing Spin -A- Win machine, ANCHOR 15587.
- Spin To Win (Associated Leisure): EuroSlot, Nov. 1993, front page and additional page, ACRES 013887 and 013889.
- Stop A Shot (Associated Leisure): Coin Slot, Jan. 1985, ANCHOR 15719.
- Super Roulette (Mitronics): Coin Slot, Jan. 24, 1986, p. 40, ANCHOR 15726.
- Super Series (Barcrest): Documents describing 1981 Super Series game, 2 page, ANCHOR 15657, 15658.
- Super Shot (Associated Leisure): Coin Slot, Jan. 1985, ANCHOR 15719.
- Super Swap (Oper Coin): Coin Slot, Jan. 1990, 1 page, ANCHOR 15583.
- Super Star (Barcrest): Document showing Super Star game, Feb. 10, 1979, ANCHOR 15581.
- Target (Aristocrat): Coin Slot, Jan. 26, 1980, p. 58 (bottom right), ACNHOR 15578.
- Ten/Twenty (Ace Coin): Documents describing 1985 "Ten/Twenty" game, 3 pages, ANCHOR 15694, 15695, 15733.
- Trispin (Oper Coin): Coin Slot, Jan. 1990, 1 page, ANCHOR 15583.
- Twist 'n Shout (Project Coin): Documents describing "Twist 'n Shout" game, Oct. 16, 1992, 3 pages, ANCHOR 15643-15644 & ACRES 013956.
- Victor (Drobus): Bueschel, Richard M., "An Illustrated Guide to the 100 Most Collectible Trade Simulators," p. 29 (1978).
- Videomat: EuroSlot, Jan. 1993, front page and additional pages, ACRES 013926, 013928 and 013929.
- Wheel n' Deal (Summit Coin): Page from Coin Slot, Jan. 16, 1982 showing "Wheel 'n Deal" game and enlargement, 2 pages, ANCHOR 15592, 15538.
- Wheel of Fortune (Barcrest): Catalog of Barcrest Casino Technologies, 6 pages: ANCHOR 15597-15599, 15602, 15617, 15619; page ANCHOR 15602, states "Price list per Jun. 1996"; p. ANCHOR 15617 has 1995 date.
- Wheel of Fortune (Barcrest): Document showing "Wheel of Fortune" game ANCHOR 15758.
- Wheel of Fortune (Barcrest): 15-page document describing "Wheel of Fortune" game, dated Dec. 16, 1991, ANCHOR 15759-15773.
- Wheel of Fortune (Barcrest): EuroSlot, Aug. 1994, front page and additional page, ACRES 013904 and 013906.
- Wheel of Fortune (Barcrest): 2-page document referring to Wheel of Fortune I (1991) and Wheel of Fortune II (1995), ANCHOR 15774-15775.
- Wheel of Fortune (Barcrest): EuroSlot, Nov. 1993, front page and additional page, ACRES 013887 and 013890.
- Wheel of Fortune (Barcrest): Intergame Magazine, Jun. 1995, cover.
- Wheel of Fortune (Bell-Fruit Manufacturing): Page from Coin Slot, Jan. 26, 1980, showing "Wheel of Fortune" game (bottom left), ANCHOR 15578.
- Wheel of Fortune (Griswold): Bueschel, Richard M., "An Illustrated Guide to the 100 Most Collectible Trade Simulators," p. 21 (1978).
- Wheel of Fortune (Project Coin): EuroSlot, Apr. 1994, front page and additional page, ACRES 013898 and 013900.
- Wheel of Fortune (Project Coin): Coin Slot, May 22, 1992, 2 pages, ACRES 013940 and 013946.
- Wheel of Fortune (Project Coin): Coin Slot, May 29, 1992, 1 page, ACRES 013936.
- Wheel of Fortune (Project Coin): Jul. 13, 2000 letter from Michael Broaddus to Steven Daniels regarding 1992 Wheel of Fortune game.

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Page 5

Wheel of Fortune (Project Coin): JPEG images of 1992 Wheel of Fortune game enclosed with Jul. 13, 2000 letter, 6 pages, Mvc-134s, Mvc-135s, Mvc-136s, Mvc-137s, Mvc-143s, Mvc-161s.

Wheel of Fortune (Summit Coin): Page from Coin Slot, Jan. 16, 1982 showing "Wheel of Fortune" game and enlargement thereof, 2 pages, ANCHOR 15592, 15538.

Wheel of Fortune: Coin Slot, Oct. 18, 1985, p. 12, ANCHOR 15722.

Wheel of Fortune: EuroSlot, May 1992, front page and additional, ACRES 013913 and 013915.

Whirlo: Coin Slot, Feb. 14, 1986, p. 28, ANCHOR 15725. Winspin (Associated Leisure): Document entitled "Coin Slot Archive Summary" referring to Apr. 26, 1985 article regarding Winspin, ANCHOR 15735.

Winspin (Associated Leisure): Coin Slot article referring to 1985 Winspin game, ANCHOR 15721.

Bally Circus: Document describing 1972 "Circus" game, ANCHOR 15706.

Bally Circus: Document showing 1972 "Circus" game.

Bally Double or Nothing: p. 267 from "Chapter 11—1975-1984" describing 1975 Double or Nothing game, Model 1083.

Bally Fun Fair: Document showing "Fun Fair" game, ANCHOR 15596.

Bally Golden Wheels: Document showing 1973 Golden Wheels game.

Bally Lucky Stars: Cover page of journal entitled "Loose Change" dated Sep. 1991 and showing Bally Lucky Stars game.

Bally Monte Carlo: Oct. 18, 2001 letter from Robert Kovelman to Joseph Walkowski.

Bally Monte Carlo : Document with photocopied image of upper portion of 1977 Bally Monte Carlo slot machine #1 enclosed with Oct. 18, 2001 letter.

Bally Monte Carlo: Document with photocopied image of entire 1977 Bally Monte Carlo slot machine #1 enclosed with Oct. 18, 2001 letter.

Bally Monte Carlo: 1-page sheet enclosed with Oct. 18, 2001 letter showing and describing 1977 Bally Monte Carlo game.

Bally Monte Carlo: 1-page advertisement enclosed with Oct. 18, 2001 letter showing Bally Monte Carlo game, dated 1978.

Bally Monte Carlo: 1-page document enclosed with Oct. 18, 2001 letter listing model numbers, names and release dates for various Bally games, including Model No. 1117 for Danish Monte Carlo released Jan. 5, 1977 and Model No. 1117-1 for Australian Monte Carlo released Jan. 18, 1977.

Bally Monte Carlo: 1-page document enclosed with Oct. 18, 2001 letter showing image of three 2001 Bally Monte Carlo slot machines.

Bally Monte Carlo Slot Machine #1: Oct. 19, 2001 email from Robert Kovelman to Joseph Walkowski.

Bally Monte Carlo Slot Machine #1: Document with original color image of upper portion of 1977 Bally Monte Carlo slot machine #1 enclosed with Oct. 19, 2001 email.

Bally Monte Carlo Slot Machine #1: Document with original color image of entire 1977 Bally Monte Carlo slot machine #1 enclosed with Oct. 19, 2001 email.

Bally Monte Carlo Slot Machine #1: Oct. 23, 2001 email from Robert Kovelman to Joseph Walkowski regarding 1977 Bally Monte Carlo Slot machine #1, 2 pages.

Bally Monte Carlo Slot Machine #1: Document with original color JPEG image of game tag of 1977 Bally Monte Carlo slot machine #1 (40% scaled).

Bally Monte Carlo Slot Machine #1: Document with original color JPEG image of game tag of 1977 Bally Monte Carlo slot machine #1 (49% scaled).

Bally Monte Carlo Slot Machine #2: Report entitled "Bally Manufacturing Corporation Monte Carlo Slot Machine Product Analysis Report," dated Jan. 28, 2004, pp. 1-36, with original color images, prepared by TAEUS describing 1976 Bally Monte Carlo slot machine #2.

Bally Windsor Castle: Document showing Windsor Castle game, 1968, ANCHOR 15705.

Bally: Marshall Fey, Liberty Belle Books, "The Complete Service Manual For Bally Slot Machines—Electro-Mechanicals 1964-1980," dated 1993, front cover, table of contents page, pp. 2-111, and back cover.

Bally: Manual No. 2600 of Bally Manufacturing Corporation entitled "Bally Slot Machines—Service Instructions & Parts Catalog," dated Jan. 1, 1975, cover, table of contents and pp. 1-56.

Bally: Marshall Fey, Liberty Belle Books, "Ball Slot Machines—Electro-Mechanicals 1964-1980, Revised 3<sup>rd</sup> Edition, front cover (outside and inside), pp. 1-75, 2-page chart entitled Bally Electro-Mechanical Slot Chart 1964-1980, 2-page chart entitled Bally Series E Slot Chart 1980-1987," additional page, and back cover (inside and outside).

Bally Bonus Sevy: Document showing 1993 Bonus Sevy game.

Amusement Machine Guide, Jul./Aug. 1988, cover, pp. 3-233 and 235-242 and 2 additional pages (p. 234 is missing), ANCHOR 15796-16037.

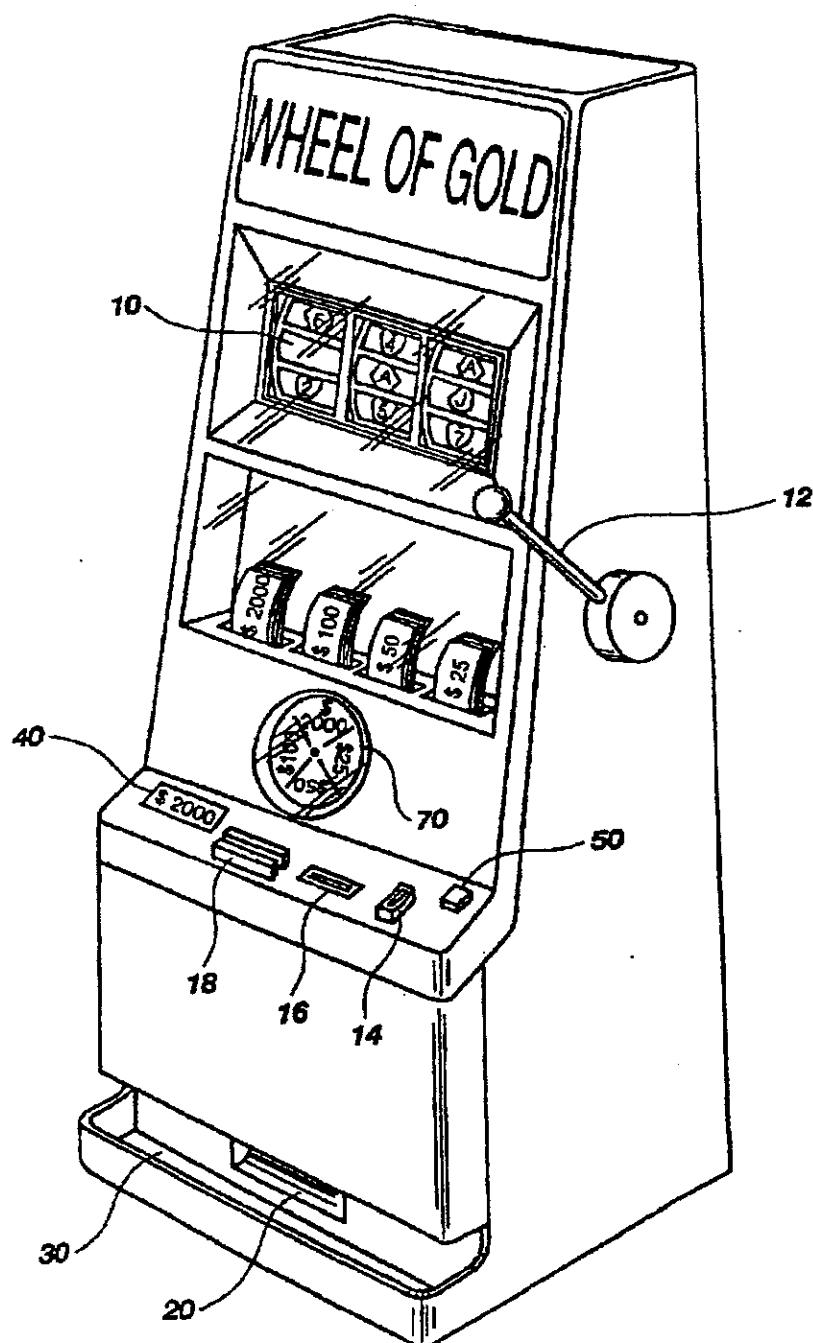
\* cited by examiner

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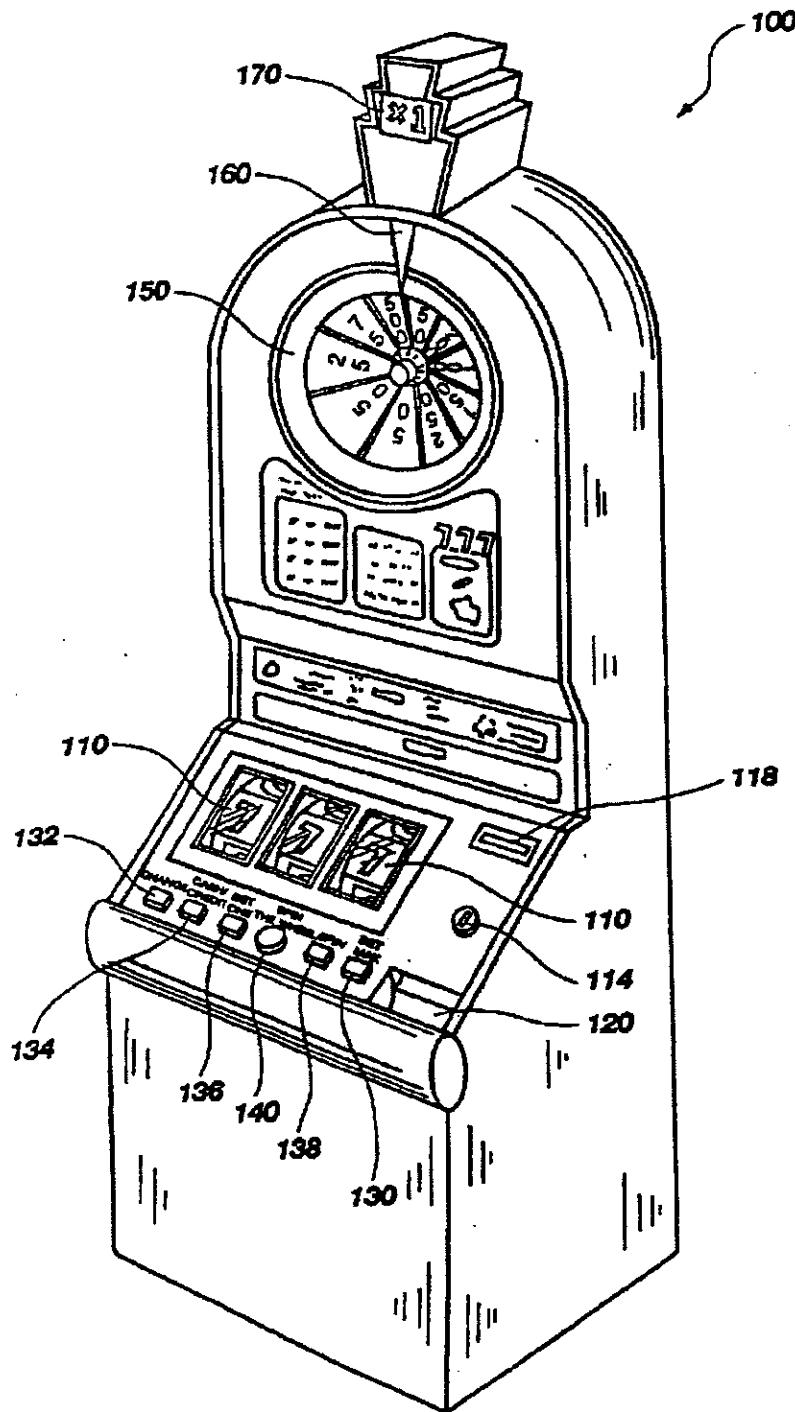
*Fig. 1*

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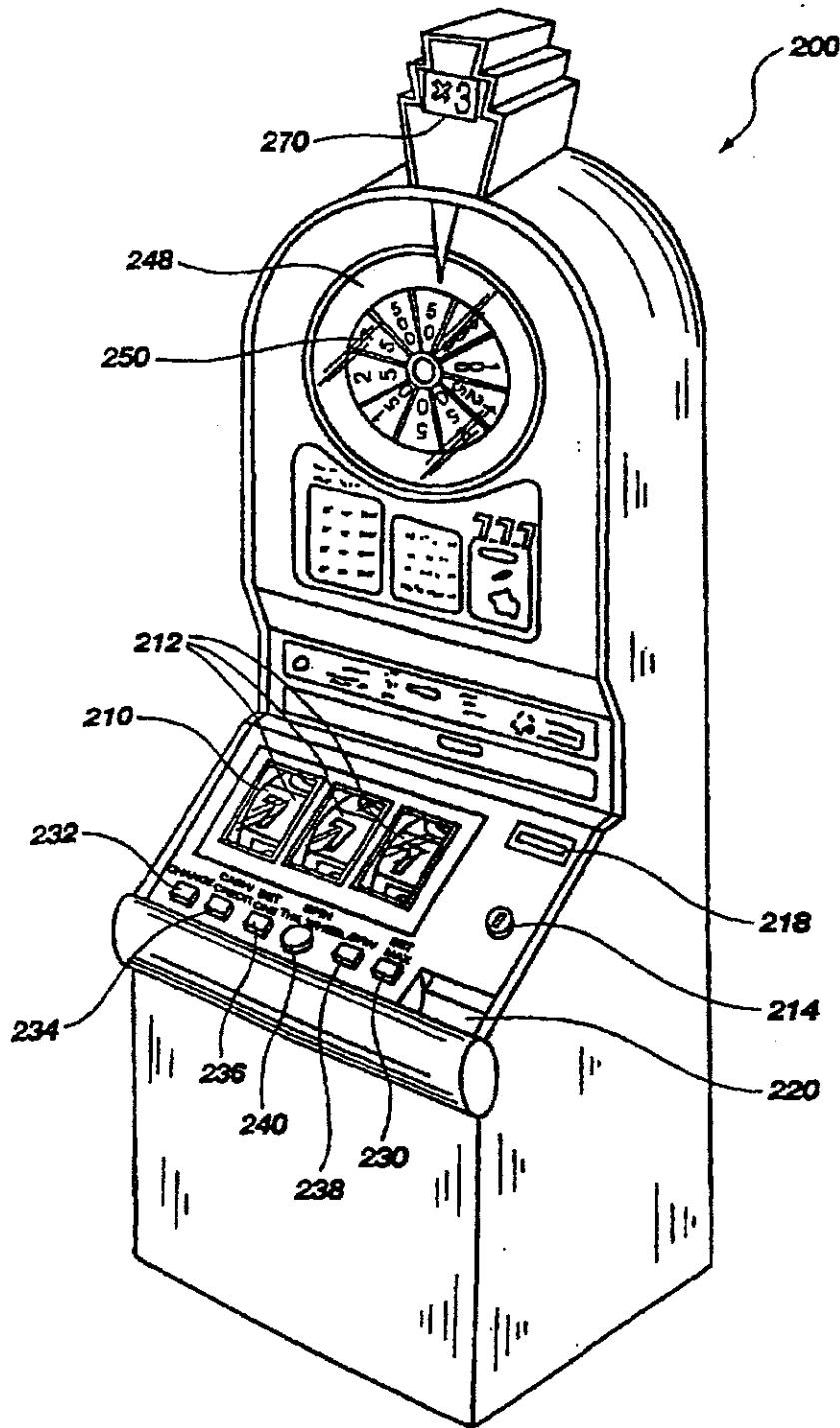
**Fig. 2**

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*Fig. 3*

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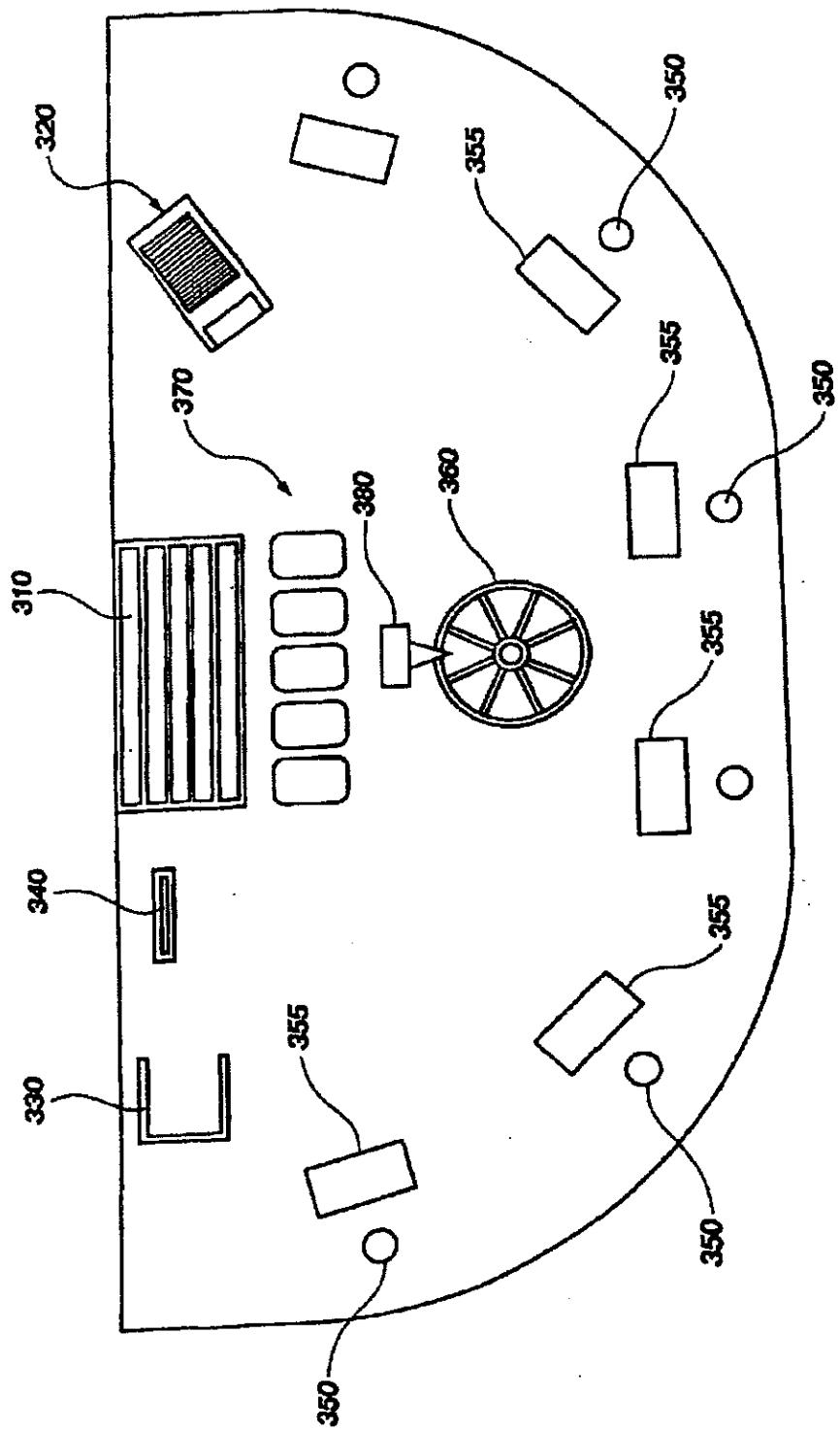


Fig. 4

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## SLOT MACHINE WITH AN ADDITIONAL PAYOUT INDICATOR

## RELATED APPLICATION DATA

This patent is a continuation of U.S. Ser. No. 09/169,666 filed in the Patent Office on Oct. 9, 1998 now abandoned, which is a continuation of U.S. Ser. No. 08/907,764 filed in the Patent Office on Aug. 8, 1997, now U.S. Pat. No. 5,848,932, which is a continuation-in-part of U.S. Ser. No. 08/311,783 filed in the Patent Office on Sep. 23, 1994, now abandoned. All of the patent applications identified in this paragraph are incorporated by reference herein in their entirety.

## BACKGROUND OF THE INVENTION

Games of chance have been enjoyed by people for years and have enjoyed widespread popularity in recent times. Many people enjoy playing a wide variety of games that they have not played before. Playing new games adds to the excitement of this recreational activity particularly when some form of "gaming" is involved. As used herein, the term "gaming" and "gaming devices" are used to indicate that some form of wagering is involved, and that players must make wagers of value, whether actual currency or some equivalent of value, e.g., token or credit.

One popular game of chance that has long been enjoyed by many players is the slot machine. Conventionally, a slot machine is configured for a player to input something of value, e.g., a standard denomination of currency or house token or other representation of currency or credit, and then to permit the player to activate the device which causes a plurality of reels to spin and ultimately stop to display a random combination of some form of indicia, for example, numbers or symbols. If this display contains one of a preselected plurality of winning combinations, the machine releases money into a payout chute or onto a credit meter for the player. For example, if a player initially wagered two coins of a national currency and that player won a high payout, that player may receive fifty coins of the same denomination in return.

Since it is desirable to offer players games which they have not played before, it would be desirable to provide a player with new games and additional opportunities to receive winning payouts.

Those familiar with games involving winning payouts, such as the popular television game show entitled "WHEEL OF FORTUNE" will realize that as players and observers watch a large wheel spin and gradually come to rest, the players experience a heightened feeling of anticipation and excitement as the wheel is slowing down to indicate a possible prize.

It would therefore also be desirable to provide a payout indicator which is discernible by a player and/or other observers.

## SUMMARY OF THE INVENTION

Various embodiments of the present invention comprise methods of playing games, gaming devices and table games utilizing a primary game, e.g., rotatable reels, and at least one discernible indicia of a secondary game, preferably comprising a payout indicator. The secondary game is separate from the primary game either physically or temporally.

According to the most preferred embodiments, a bonus payout indicator is clearly visible to a player and is operable

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when primary reels of a primary game slot machine stop on certain predetermined indicia. According to one preferred embodiment of the present invention, a secondary payout indicator is in the form of a rotatable bonus wheel which can be caused to spin automatically or in response to some action by a player, e.g., the player pushing a button, when the primary game indicates one of a predetermined plurality of indicia. The wheel is caused to gradually reduce speed and when the wheel stops, a pointer indicates the payout to be awarded to the player.

Another preferred embodiment of the present invention further comprises a discernible multiplier which provides the ability to change either the payout from the primary gaming unit or the secondary payout indicator, or both. As described in more detail below, it is within the scope of the present invention to provide a payout from the primary gaming unit, a payout indicated by the secondary indicator only, a payout from the primary gaming unit or the secondary indicator as changed by the multiplier, or a separate, plurality of payouts from the primary gaming unit and the secondary indicator either with or without modification by a multiplier.

According to one preferred embodiment of the present invention, the mechanical bonus payout indicator is electronically operated and is linked to a random number generator which determines where the secondary indicator actually stops.

According to another preferred embodiment of the present invention, when the primary unit stop on one of a predetermined plurality of winning indicia sets, a second event actuator is placed in an active state. According to this embodiment, a person, such as the player, must actuate the actuator in order to operate the bonus indicator.

According to another embodiment of the present invention, the bonus actuator requires operator intervention so that a player must involve a casino attendant who can activate the bonus indicator.

According to another preferred embodiment of the present invention, the bonus indicator is connected to a drive mechanism which gradually reduces the rate of spin of the bonus wheel before the bonus wheel stops.

Still other embodiments of the present invention comprise gaming devices having electronic means for displaying indicia of rotatable reels such as a video screen and/or means for displaying indicia of a secondary payout indicator, such as a video screen. The present invention also comprises methods for playing a game of chance. One preferred method comprises the steps of displaying a first randomly selected combination of indicia, said displayed indicia selected from the group consisting of slot reels, indicia of at least one reel, indicia of at least one playing card, and combinations thereof; generating at least one signal corresponding to at least one select display of first indicia; providing at least one discernible indicia of a mechanical bonus indicator, said bonus indicator indicia indicating at least one of a plurality of possible payouts, wherein said bonus indicator indicia providing means is operatively connected to said first, standard gaming unit and actuatable in response to said signal. According to one preferred embodiment, the discernible indicia of a mechanical bonus indicator gradually reduces the rate of movement of the mechanical bonus indicator for some period of time prior to actually providing the discernible indicia of a payout. According to another embodiment, a multiplier is provided to multiply at least one payout by a multiple which is most preferably indicated to a player. The multiple can preferably

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sequentially change as discernable indicia change. For example, a plurality of multiples can be synchronized with a plurality of discernable indicia on the mechanical bonus indicator such that the multiple changes as the payout indicated changes.

Further embodiments of the present invention comprises a method of conducting a game of chance comprising the steps of providing a player with an opportunity to place a wager; displaying a randomly selected combination of indicia, said displayed indicia selected from the group consisting of reels, indicia of at least one and preferably a plurality of reels, indicia of at least one and preferably a plurality of playing cards, and combination thereof; generating at least one signal corresponding to at least one select display of said indicia; providing at least one discernible indicia of a mechanical bonus indicator, said bonus indicator indicia indicating at least one of a plurality of possible bonuses, wherein said bonus indicator indicia is in the form of a wheel or reel and is actuatable in response to said signal.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view one of a gaming device of one embodiment of the present invention.

FIG. 2 is another embodiment of a gaming device of the present invention.

FIG. 3 illustrates an alternative embodiment of the present invention.

FIG. 4 is an alternative embodiment of the present invention in the form of a table game.

## DETAILED DESCRIPTION

The various embodiments of the present invention are designed to provide added excitement to a board/table game or gaming device in order to increase the enjoyment to players and to serve as an added attraction to potential players. One preferred embodiment of the present invention, illustrated in FIG. 1, comprises a primary gaming unit which comprises three rotatable reels 10, each of which comprise a plurality of indicia on the periphery thereof. The illustrated gaming device comprises mechanical lever 12, coin slot 14, currency validator 16 and a credit card validator 18. In a manner which will be recognized by those skilled in the art, each reel 10 is designed to rotate and then stop in order to visually display at least one, and preferably a number of indicia. If the collection of indicia displayed by the three reels is one of a predetermined plurality of winning indicia sets, then the player can typically be provided with a winning payout either through coin chute 20 which deposits winnings into a coin trough 30 or by increasing the player's credits in a credit window 40.

According to one aspect of the present invention, when the reels 10 display at least one of a plurality of predetermined winning indicia or indicia sets then the player is provided with an opportunity for a secondary payout. According to this illustrated embodiment of the present invention, a bonus actuator button 50 is placed in an operative state when reels 10 display a bonus indicia set. A player must then depress bonus actuator 50 in order to start bonus indicator 70 spinning. In the illustrated embodiment, bonus indicator 70 is in the form of a rotatable wheel. The wheel may be a carnival-type wheel comprising pegs and a clapper or could take one or more other forms, such as a fanciful wheel typically used in a roulette game as shown in the embodiment of FIG. 2. If a preferred motor driven wheel is utilized, it is preferably linked to some random value

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generator in order to randomly determine where the wheel will actually stop. In order to enhance the playing experience, sound effects corresponding to a clapper slapping against pegs of a carnival wheel are preferably provided as the wheel passes from one segment to another. The bonus indicator 70 is also preferably controlled so that the rate of spin is reduced, most preferably gradually reduced, prior to stopping in order to simulate a mechanical spinning wheel.

10 The facing surface of bonus indicator 70 of FIG. 1 comprises four distinct areas bearing indicia of the bonus payout to the player. In the illustrated embodiment, the bonus indicator has areas indicating bonuses of \$25.00, \$50.00, \$100.00, and \$2,000.00. When bonus indicator 70 stops, an indicator (not shown) will indicate the area on the bonus wheel corresponding to the amounts of the bonus to be provided to the player.

In a manner which will be appreciated by those skilled in the art, bonus indicator 70 can be operatively linked to a "payout" mechanism which provides a bonus payout to a player through currency chute 20 or by increasing the amount of winnings shown in credit window 40. As stated above, the payout of the bonus indicator can be in addition to a standard payout by the primary gaming unit or can be in place of the payout normally associated with the primary gaming unit.

Those familiar with gaming and game shows, will appreciate that players and observers typically experience a heightened level of anticipation and excitement as they observe one or more moving objects approaching a winning position. It is therefore most preferred for the bonus indicator of the present invention to be readily discernible, e.g., clearly visible and/or audible to the player.

According to another preferred embodiment of the present invention, a bonus indicator is connected to a electronic control unit, for example a motor, which gradually decreases the rate of movement of the bonus indicator before the bonus indicator stops. According to this embodiment of the present invention, players can be provided with a realistic sense of a totally mechanical indicator. Those skilled in the art will appreciate that such a control unit can also readily be connected to a random generator which will randomly select the winning payout according to a predetermined frequency of occurrence for each individual bonus payout, and then cause the bonus indicator to stop at the desired area. Those skilled in the art will also appreciate that other mechanisms can be utilized for gradually decreasing the rate of movement of the secondary payout indicator, e.g., a controlled braking system.

According to another embodiment of the present invention, when reels 10 display an indicia set which will provide a bonus, the bonus indicator becomes activatable but requires intervention by a house attendant, such as a casino attendant, in order to activate the bonus indicator. According to this embodiment of the present invention, the casino is provided with greater control over the actuation of the bonus indicator and, if desired, can accompany the actuation of the bonus indicator with great fanfare. It will be appreciated that the amounts of the bonus indicated in the figures are merely for purposes of illustration and, if desired, one of the amounts on the bonus indicator can have a significantly greater value. For example, one of the areas on the bonus indicator may correspond to a new automobile, a luxury vacation or a very large sum of money.

While the illustrated embodiment of the present invention in FIG. 1 is generally in the form of a rotatable wheel, other

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visible, mechanical indicia can be provided, whether controlled totally mechanically, electro-mechanically, or electronically without departing from the scope of the present invention.

As shown in FIG. 1, in order to provide additional levels of excitement, indicia of the possible bonuses are preferably visibly displayed within the slot machine. For example, in one illustrated embodiment, a shelf is preferably displayed comprising piles of currency equal to the amounts on the bonus indicator. While actual cash is preferred, the slot machine may also be provided with fake currency or simply indicia of actual currency or the other bonus prizes.

A preferred embodiment of the present invention is illustrated in FIG. 2 wherein a gaming device 100 comprises a primary gaming unit in the form a standard three-reel slot machine which displays reels 110. Suitable controls and currency mechanisms including a coin slot 114, bill validator 118, payout shoot 120 are provided. Furthermore, suitable player controls including CHANGE button 132, CASH/CREDIT button 134, BET ONE button 136, SPIN button 138 and BET MAX button 130 are also provided.

In addition to these standard controls the control panel of this preferred illustrated embodiment of the present invention comprises a SPIN THE WHEEL button 140 which becomes actuatable when the primary gaming unit, as indicated by reels 110, has randomly selected one of a plurality of predetermined indicia sets. While the primary gaming unit shown in the lower portion of the cabinet of gaming device 100 will typically have the ability to provide a plurality of winning payouts, the SPIN THE WHEEL button 140 can become actuatable when the stopped reels 110 indicate some subset of the primary unit's winning indicia, when any one of the winning reel indicia are displayed, or further in response to one or more other predetermined indicia, or a combination thereof. For example, the SPIN THE WHEEL feature, or some other secondary game, can be actuated or become activatable in response to a single indicia indicated on one of the reels or reel indicia.

When the SPIN THE WHEEL button 140 is actuated by a player, bonus wheel 150 is caused to rotate and randomly select and display one of a plurality of different areas. According to the preferred illustrated embodiment, all of the bonus areas indicate an increased winning value for the player. However, it is within the scope of the present invention to provide non-monetary prizes or losing spaces wherein no additional prize is provided and/or wherein the prize normally associated with the indicia shown on the primary gaming unit reels 110 is reduced. In the illustrated embodiment, a pointer 160 advantageously indicates the result of the bonus indicator 150.

In addition to the bonus wheel 150, this preferred illustrated embodiment of the present invention also comprises a bonus multiplier 170. The multiplier 170 preferably randomly selects a value by which the bonus indicated by bonus wheel 150 is multiplied. For example, the bonus indicator 170 can have an LED screen which cycles through multipliers of "times one", "times two" and "times three" which will indicate that the bonus is as indicated, doubled, or tripled, respectively. The multiplier 170 can be programmed to select a multiplier either totally randomly or according to some other predetermined frequency of occurrence wherein certain multipliers will occur more frequently than other multipliers. While this illustrated embodiment comprises whole number multipliers, it is also within the scope of the present invention to utilize values other than whole numbers or to include multipliers which will result in a decrease in the

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value shown by the bonus indicator 150. For example, a multiplier sequence could include a "times zero" value. When bonus wheel indicator 150 is not in use, the multiplier LED window can be set to an attract mode wherein a message is displayed to players or potential players. For example, the LED display could show a message, either in complete form or can be set to sequentially display either words or individual letters, such as "SPIN-THE-WHEEL".

According to the various embodiments of the present invention, the bonus multiplier or additional payout multiplier is most preferably synchronized with the movement of the rotatable wheel or indicia of a rotatable reel, such that the multiplier value will change as each wheel segment passes the indicator. The most preferred embodiments of the present invention additionally comprise audible signals, such as the clicking of a clapper of the type found on actual spinning wheel comprising a clapper indicator and pegs which strike the clapper. The audible signals are preferably also synchronized with the segments of the wheel such that an audible signal is provided as the wheel moves from one segment to another. This advantageously provides the effect of a mechanical wheel comprising pegs moving past a mechanical clapper.

FIG. 3 illustrates a less preferred embodiment of the present invention wherein a gaming device 200 comprising similar controls as the controls illustrated in the embodiment of FIG. 3. In this illustrated embodiment, and wherein a bonus indicator 250 is in the form of an electronically generated image, such as a video screen or an LED display and provides discernible indicia, e.g., a visual video display, of a bonus wheel. For example, the video display can show a wheel of the type used in a roulette game such as the wheel 150 illustrated in FIG. 2.

The slot machine shown in FIG. 3 comprises a video display 210, such as a video screen, which displays three reels 210, each of which comprise a plurality of indicia. In addition, this slot machine comprises a video display 250, such as a second video screen, for displaying a bonus payout indicator. While separate screens are preferred, both the reels and the bonus payout indicator could be displayed on the same video screen. According to this embodiment of the present invention, the bonus payout indicator displays indicia of a wheel or a reel.

In a manner known in the art, the gaming device comprises a coin slot 214, a currency validator 218, and a coin chute 220. After placing a wager, a player determines the amount of his wager by either pressing the BET ONE button 236 or the BET MAX button 230. After the player has selected the amount of his wager, he depresses the SPIN button 238 which "spins" the reels shown in video display window 210.

Each indicia of a displayed reel 210 is designed to indicate rotation and then stop in order to visually display at least one, and preferably a number of indicia. When reels 210 display a particular indicia set or one of predetermined plurality of indicia sets, then the additional payout mode is activated and video display 250 displaying payout indicator is placed in an operable state. In this illustrated embodiment, the displayed payout indicator 250 displays an indicia of a rotating wheel comprising a plurality of distinct areas bearing indicia of payouts to the player. Payout indicator 250, is caused to selectively indicate one of the plurality of indicia, either automatically, upon intervention of a casino or house attendant, or upon a player depressing SPIN THE WHEEL button 240 in order to start indicator 250 spinning. It will be appreciated that the amounts of the payout indicated in FIG.

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2 are merely for purposes of illustration and, if desired, one of the amounts on the bonus indicator can have a greater value, e.g., a new automobile, a luxury vacation or large sum of money which may be collected subsequently, or lesser values, e.g., no payout.

The displayed reels 210 and displayed bonus indicator 250 can be operably controlled by suitable controls to gradually slow down as they come to a complete stop, displaying a selected reel indicia and a bonus indicia, respectively.

The embodiment of the present invention illustrated in FIG. 2 is considered most preferable since it is believed that players prefer to see actual slot reels and an actual bonus wheel spinning in a gaming device. Other, less preferred embodiments are also possible while providing some of the advantages of the present invention. Specifically, it is feasible to replace the spinning reels with other forms of standard gaming units, for example, a visible indicia of reels or indicia of playing cards, shown for example on a video screen. It is also possible to replace the wheel with some other discernible indicia of a mechanical bonus indicator which is operatively connected to the first standard gaming unit and which either automatically commences or is actuatable in response to the result provided by the standard gaming unit. According to the present invention, both of the standard gaming unit and bonus indicator are controlled to provide random results.

From the foregoing description, it will be appreciated that embodiments of the present invention, which are specifically directed to gaming and gaming devices, comprise three different indicators. The most preferred embodiments comprise a primary (standard) gaming unit, an additional payout indicator, preferably in the form of a wheel, and a payout multiplier. While the illustrated payout multiplier of the illustrated embodiments is in the form of an electronically selected value, it is also within the scope of the present invention to have a multiplier which involves some skill on the part of a player. For example, according to an additional preferred embodiment of the present invention, a player will shoot actual projectiles, such as coins, at one or more targets in an effort to increase the value of the multiplier. In any of the embodiments of the present invention utilizing a multiplier, the multiplier can affect the value of a payout from the standard gaming unit, the additional payout indicator, or both the standard gaming unit and the payout indicator.

As stated above, the present invention also includes methods of conducting a wagering game of chance comprising the steps of providing a player with an opportunity to place a wager; displaying a randomly selected combination of indicia, said displayed indicia selected from the group consisting of reels, indicia of reels, indicia of playing cards, and combination thereof; generating at least one signal corresponding to at least one select display of said indicia; providing at least one discernible indicia of a mechanical bonus indicator, said bonus indicator indicia indicating at least one of a plurality of possible bonuses, wherein said bonus indicator indicia is in the form of a wheel or reel and is actuatable in response to said signal. A further preferred method comprises the step of displaying at least one value by which a payout may be multiplied.

Another method of the present invention comprises the steps of requiring at least one player to make a wager; displaying at least one randomly selected playing card from a predetermined card indicia set; displaying and rotating a rotatable wheel comprising a plurality of indicia correspond-

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ing to a plurality of prizes if said displayed playing card indicia was one of a preselected plurality of winning card indicia; and determining a winning payout with said wheel, wherein said winning payout is randomly selected.

5 Another embodiment of the present invention in the form of a table game is illustrated in FIG. 4 wherein a chip rack 310, card shoe 320, discard shoe 330, wager slot 340, betting areas 350, and secondary event wheel 360 are provided. According to this embodiment of the present invention after 10 one or more players have placed wagers in wagering areas 350, a dealer will provide cards to the wagering players in areas 355 and then provide cards to himself in card area 370. After the cards have been dealt, the initial bets can be resolved by comparing the players' cards to the dealer's cards. 15 While the illustrated game is shown as five card stud poker, other games and arrangements can also be utilized without departing from the scope of the present invention. For example, a player's cards can be compared to other player's cards or a predetermined payout schedule, or other 20 card games can be utilized including seven card draw, five card draw poker, black jack, etc.

Upon the happening of a predetermined occurrence, such as the receipt of one of a preselected plurality of card hands, 25 one or more of the players can be given the opportunity to spin the payout indicator 360, which is most preferably electronically operated by an actuation switch. The actuation switch can be within reach of the players for added excitement or can be actuated by the dealer. Alternatively, actuation by a player's actuator switch can require prior actuation 30 of a dealer switch which will then render the player's switch operable. If less than all of the players are going to benefit from the results of payout indicator 360, additional indicators can be positioned proximate the players in order to indicate which players are involved in the spin of payout 35 indicator 360. In a manner similar to that shown in FIG. 2, a payout multiplier 380 is also provided. Sound effects as referenced above and means for gradually decreasing the rate of movement of the payout indicator 360 are also 40 preferably provided.

In addition to the primary gaming unit or primary game, the secondary event, and the multiplier, another preferred aspect of the present invention which can be utilized with all previously described embodiments comprises a DOUBLE-OR-NOTHING feature wherein winning players may wager their winnings in a double-or-nothing fashion. According to 45 this feature of the present invention, a player may be provided with the opportunity to bet on red or black after he has won a game. For this purpose, the rotatable wheels of the present invention are preferably provided with alternating red and black pie-shaped segments. According to this feature, a player can be provided with the opportunity of betting on red or black with the opportunity of doubling his 50 winnings if he makes a correct selection. After the player makes his selection, the wheel would be rotated to determine whether the player has successfully doubled his winnings or has lost those winnings. A player may be provided with the opportunity of utilizing the double or nothing feature several 55 times and/or up to a certain maximum to be determined by the game operator.

What is claimed is:

1. A slot machine, comprising:  
a value-input device;  
a first slot machine reel having a plurality of first reel symbols disposed thereon;
2. A second slot machine reel having a plurality of second reel symbols disposed thereon;

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a third slot machine reel having a plurality of third reel symbols disposed thereon;

a movable mechanical payout indicator comprising a rotatable wheel payout indicator having a face, said rotatable wheel payout indicator being rotatable about an axis that passes through said rotatable wheel payout indicator,

one of said first, second and third slot machine reels being rotatable about an axis that is not parallel to said axis about which said rotatable wheel payout indicator is rotatable;

a plurality of circumferentially arranged payout areas comprising a first payout area, a second payout area, and a third payout area, said circumferentially arranged payout areas being disposed on said face of said rotatable wheel payout indicator around said axis about which said rotatable wheel payout indicator is rotatable;

a plurality of payout amount symbols disposed on said rotatable wheel payout indicator in said payout areas, said payout amount symbols including a first payout amount symbol comprising a numeral disposed in said first payout area, a second payout amount symbol comprising a numeral disposed in said second payout area, and a third payout amount symbol comprising a numeral disposed in said third payout area;

a random generator that randomly selects a payout amount;

a control unit operatively coupled to said random generator, said control unit comprising a motor and being operatively coupled to said rotatable wheel payout indicator, and

an actuator button that, upon actuation by a player, causes said rotatable wheel payout indicator to rotate, said actuator button being placed in an operative state after a plurality of said reel symbols are displayed to the player,

said control unit gradually reducing a rotational rate of said rotatable wheel payout indicator before said rotatable wheel payout indicator stops,

based on an action performed by said random generator, after said payout amount has been selected, said control unit then causing said rotatable wheel payout indicator to stop at a stop position based on said selected payout amount.

2. A slot machine as defined in claim 1 wherein said rotatable wheel payout indicator is rotated after display of a winning indicia set of said reel symbols.

3. A slot machine, comprising:

- a value-input device;
- a plurality of first reel symbols;
- a plurality of second reel symbols;
- a plurality of third reel symbols;
- a movable mechanical payout indicator comprising a rotatable wheel payout indicator having a face, said rotatable wheel payout indicator being rotatable about an axis that passes through said rotatable wheel payout indicator,
- a plurality of circumferentially arranged payout areas comprising a first payout area, a second payout area, and a third payout area, said circumferentially arranged payout areas being disposed on said face of said rotatable wheel payout indicator around said axis;
- a plurality of payout amount symbols disposed on said rotatable wheel payout indicator in said payout areas,

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said payout amount symbols including a first payout amount symbol comprising a numeral disposed in said first payout area, a second payout amount symbol comprising a numeral disposed in said second payout area, and a third payout amount symbol comprising a numeral disposed in said third payout area,

a random generator that randomly selects a payout amount; and

a control unit operatively coupled to said random generator, said control unit comprising a motor and being operatively coupled to said rotatable wheel payout indicator,

said rotatable wheel payout indicator being rotated after a plurality of said reel symbols are displayed to a player, based on an action performed by said random generator, after said payout amount has been selected, said control unit then causing said rotatable wheel payout indicator to stop at a stop position based on said selected payout amount.

4. A slot machine as defined in claim 3 wherein said selected payout amount corresponds to a payout amount indicated by one of said payout amount symbols.

5. A slot machine as defined in claim 3 wherein said rotatable wheel payout indicator is rotated after display of a winning indicia set of said reel symbols.

6. A slot machine as defined in claim 3 additionally comprising a fourth payout area circumferentially arranged about said axis and a fourth payout amount symbol disposed in said fourth payout area.

7. A slot machine as defined in claim 6 wherein all payout amount symbols disposed on said rotatable wheel payout indicator are simultaneously visible to the player.

8. A slot machine as defined in claim 3 additionally comprising:

- a first slot machine reel that is rotatable;
- a second slot machine reel that is rotatable; and
- a third slot machine reel that is rotatable,

wherein said plurality of first reel symbols are disposed on a circumferential surface of said first slot machine reel,

wherein said plurality of second reel symbols are disposed on a circumferential surface of said second slot machine reel, and

wherein said plurality of third reel symbols are disposed on a circumferential surface of said third slot machine reel.

9. A slot machine as defined in claim 8 wherein one of said first, second and third slot machine reels is rotatable about an axis that is not parallel to said axis about which said rotatable wheel payout indicator is rotatable.

10. A slot machine as defined in claim 3 additionally comprising an actuator button that, upon actuation by the player, causes said rotatable wheel payout indicator to rotate, said actuator button being placed in an operative state after a plurality of said reel symbols are displayed to the player.

11. A slot machine, comprising:

- a value-input device;
- a plurality of first reel symbols;
- a plurality of second reel symbols;
- a plurality of third reel symbols;
- a payout indicator that is movable about an axis;
- a plurality of payout areas comprising a first payout area, a second payout area, and a third payout area, said payout areas being circumferentially arranged about said axis;

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a plurality of payout amount symbols disposed in said payout areas, said payout amount symbols including a first payout amount symbol comprising a numeral disposed in said first payout area, a second payout amount symbol comprising a numeral disposed in said second payout area, and a third payout amount symbol comprising a numeral disposed in said third payout area;

a random generator that randomly selects a payout amount; and

a control unit operatively coupled to said random generator and to said movable payout indicator, an actuator button that, upon actuation by a player, causes said movable payout indicator to move, said actuator button being placed in an operative state after a plurality of said reel symbols are displayed to the player,

based on an action performed by said random generator, after said payout amount has been selected, said control unit then causing said movable payout indicator to stop at a stop position based on said selected payout amount.

12. A slot machine as defined in claim 11 wherein said selected payout amount corresponds to a payout amount indicated by one of said payout amount symbols.

13. A slot machine as defined in claim 11 wherein said movable payout indicator comprises a movable mechanical member and wherein said control unit comprises a motor.

14. A slot machine as defined in claim 11 wherein said movable payout indicator comprises a rotatable wheel and wherein said control unit comprises a motor.

15. A slot machine as defined in claim 11 additionally comprising:

a first slot machine reel that is rotatable;  
a second slot machine reel that is rotatable; and  
a third slot machine reel that is rotatable,  
wherein said plurality of first reel symbols are disposed on a circumferential surface of said first slot machine reel, wherein said plurality of second reel symbols are disposed on a circumferential surface of said second slot machine reel, and  
wherein said plurality of third reel symbols are disposed on a circumferential surface of said third slot machine reel.

16. A slot machine as defined in claim 15 wherein one of said first, second and third slot machine reels is rotatable about an axis that is not parallel to said axis about which said movable payout indicator is movable.

17. A slot machine, comprising:

a value-input device;  
a plurality of first reel symbols;  
a plurality of second reel symbols;  
a plurality of third reel symbols;  
a payout indicator that is movable about an axis;  
a plurality of payout areas comprising a first payout area, a second payout area, and a third payout area, said payout areas being circumferentially arranged about said axis;  
a plurality of payout amount symbols disposed in said payout areas, said payout amount symbols including a first payout amount symbol comprising a numeral disposed in said first payout area, a second payout amount symbol comprising a numeral disposed in said second payout area, and a third payout amount symbol comprising a numeral disposed in said third payout area;

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a random generator that randomly selects a payout amount; and

a control unit operatively coupled to said random generator and to said movable payout indicator.

said movable payout indicator being moved after a plurality of said reel symbols are displayed to a player, based on an action performed by said random generator, after said payout amount has been selected, said control unit then causing said movable payout indicator to stop at a stop position based on said selected payout amount.

18. A slot machine as defined in claim 17 wherein said selected payout amount corresponds to a payout amount indicated by one of said payout amount symbols.

19. A slot machine as defined in claim 17 wherein said movable payout indicator comprises a movable mechanical member and wherein said control unit comprises a motor.

20. A slot machine as defined in claim 17 wherein said movable payout indicator comprises a rotatable wheel and wherein said control unit comprises a motor.

21. A slot machine as defined in claim 17 wherein said movable payout indicator is moved after display of a winning indicia set of said reel symbols.

22. A slot machine as defined in claim 17 additionally comprising a fourth payout area circumferentially arranged about said axis and a fourth payout amount symbol disposed in said fourth payout area.

23. A slot machine as defined in claim 22 wherein all payout amount symbols are simultaneously visible to the player.

24. A slot machine as defined in claim 17 additionally comprising:

a first slot machine reel that is rotatable;  
a second slot machine reel that is rotatable; and  
a third slot machine reel that is rotatable,  
wherein said plurality of first reel symbols are disposed on a circumferential surface of said first slot machine reel, wherein said plurality of second reel symbols are disposed on a circumferential surface of said second slot machine reel, and  
wherein said plurality of third reel symbols are disposed on a circumferential surface of said third slot machine reel.

25. A slot machine as defined in claim 24 wherein one of said first, second and third slot machine reels is rotatable about an axis that is not parallel to said axis about which said movable payout indicator is movable.

26. A slot machine as defined in claim 17 additionally comprising an actuator button that, upon actuation by the player, causes said movable payout indicator to move.

27. A slot machine, comprising:  
a value-input device;  
a plurality of first reel symbols;  
a plurality of second reel symbols;  
a plurality of third reel symbols;  
a mechanical member that is movable about an axis;  
a plurality of payout areas comprising a first payout area, a second payout area, and a third payout area, said payout areas being circumferentially arranged about said axis;  
a plurality of payout amount symbols disposed in said payout areas, said payout amount symbols including a first payout amount symbol comprising a numeral disposed in said first payout area, a second payout amount symbol comprising a numeral disposed in said second payout area, and a third payout amount symbol comprising a numeral disposed in said third payout area;

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second payout area, and a third payout amount symbol comprising a numeral disposed in said third payout area;  
 a random generator that randomly selects a payout amount;  
 a control unit operatively coupled to said random generator, said control unit comprising a motor and being operatively coupled to said movable mechanical member; and  
 an actuator button that, upon actuation by a player, causes said movable mechanical member to move, said actuator button being placed in an operative state after a plurality of said reel symbols are displayed to the player,  
 based on an action performed by said random generator after said payout amount has been selected, said control unit then causing said movable mechanical member to stop at a stop position based on said selected payout amount.

28. A slot machine as defined in claim 27 wherein said movable mechanical member comprises a rotatable wheel.

29. A slot machine as defined in claim 27 wherein said movable mechanical member is moved after display of a winning indicia set of said reel symbols.

30. A slot machine as defined in claim 27 additionally comprising a fourth payout area circumferentially arranged about said axis and a fourth payout amount symbol disposed in said fourth payout area.

31. A slot machine as defined in claim 30 wherein all payout amount symbols are simultaneously visible to the player.

32. A slot machine as defined in claim 27 additionally comprising:

- a first slot machine reel that is rotatable;
- a second slot machine reel that is rotatable; and
- a third slot machine reel that is rotatable,

wherein said plurality of first reel symbols are disposed on a circumferential surface of said first slot machine reel,

wherein said plurality of second reel symbols are disposed on a circumferential surface of said second slot machine reel, and

wherein said plurality of third reel symbols are disposed on a circumferential surface of said third slot machine reel.

33. A slot machine as defined in claim 32 wherein one of said first, second and third slot machine reels is rotatable about an axis that is not parallel to said axis about which said movable mechanical member is movable.

34. A slot machine, comprising:

- a value-input device;
- a plurality of first reel symbols;
- a plurality of second reel symbols;
- a plurality of third reel symbols;
- a mechanical member that is movable about an axis;
- a plurality of payout areas comprising a first payout area, a second payout area, and a third payout area, said payout areas being circumferentially arranged about said axis;

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a plurality of payout amount symbols disposed in said payout areas, said payout amount symbols including a first payout amount symbol comprising a numeral disposed in said first payout area, a second payout amount symbol comprising a numeral disposed in said second payout area, and a third payout amount symbol comprising a numeral disposed in said third payout area;

a random generator that randomly selects a payout amount; and

a control unit operatively coupled to said random generator, said control unit comprising a motor and being operatively coupled to said movable mechanical member,

said movable mechanical member being moved after a plurality of said reel symbols are displayed to a player, based on an action performed by said random generator, after said payout amount has been selected, said control unit then causing said movable mechanical member to stop at a stop position based on said selected payout amount.

35. A slot machine as defined in claim 34 wherein said movable mechanical member comprises a rotatable wheel.

36. A slot machine as defined in claim 34 wherein said movable mechanical member is moved after display of a winning indicia set of said reel symbols.

37. A slot machine as defined in claim 34 additionally comprising a fourth payout area circumferentially arranged about said axis and a fourth payout amount symbol disposed in said fourth payout area.

38. A slot machine as defined in claim 37 wherein all payout amount symbols are simultaneously visible to the player.

39. A slot machine as defined in claim 34 additionally comprising:

- a first slot machine reel that is rotatable;
- a second slot machine reel that is rotatable; and
- a third slot machine reel that is rotatable,

wherein said plurality of first reel symbols are disposed on a circumferential surface of said first slot machine reel,

wherein said plurality of second reel symbols are disposed on a circumferential surface of said second slot machine reel, and

wherein said plurality of third reel symbols are disposed on a circumferential surface of said third slot machine reel.

40. A slot machine as defined in claim 39 wherein one of said first, second and third slot machine reels is rotatable about an axis that is not parallel to said axis about which said movable mechanical member is movable.

41. A slot machine as defined in claim 34 additionally comprising an actuator button that, upon actuation by the player, causes said movable mechanical member to move.

42. A slot machine as defined in claim 34 said control unit gradually reduces a rotational rate of said rotatable wheel payout indicator before said rotatable wheel payout indicator stops.

\* \* \* \* \*

**EXHIBIT M**



US005848932A

**United States Patent [19]**

Adams

[11] Patent Number: 5,848,932

[45] Date of Patent: Dec. 15, 1998

[54] METHOD OF PLAYING GAME AND GAMING GAMES WITH AN ADDITIONAL PAYOUT INDICATOR

[75] Inventor: William R. Adams, Las Vegas, Nev.

[73] Assignee: Anchor Gaming, Las Vegas, Nev.

|         |         |                                |
|---------|---------|--------------------------------|
| 1242298 | 8/1971  | United Kingdom .               |
| 2066991 | 7/1981  | United Kingdom .               |
| 2072395 | 9/1981  | United Kingdom .               |
| 2084371 | 4/1982  | United Kingdom .               |
| 2096376 | 10/1982 | United Kingdom ..... 273/143 R |
| 2201821 | 9/1988  | United Kingdom .               |
| 2202984 | 10/1988 | United Kingdom .               |

[21] Appl. No.: 907,764

[22] Filed: Aug. 8, 1997

**Related U.S. Application Data**

[63] Continuation-in-part of Ser. No. 311,783, Sep. 23, 1994, abandoned.

[51] Int. Cl. 6 G07F 17/34

[52] U.S. Cl. 463/20; 463/46; 273/143 R; 273/138.2; 273/142 R; 273/142 B

[58] Field of Search 273/143 R, 138.2, 273/138.1, 142 R, 142 B; 463/20, 46

**[56] References Cited****U.S. PATENT DOCUMENTS**

|           |         |                       |           |
|-----------|---------|-----------------------|-----------|
| 3,281,149 | 10/1966 | Miller .....          | 273/143 R |
| 4,805,907 | 2/1989  | Hagiwara .....        | 463/26    |
| 4,871,171 | 10/1989 | Rivero .....          | 463/20    |
| 5,205,555 | 4/1993  | Hamano .....          | 273/143 R |
| 5,259,616 | 11/1993 | Bergmann .....        | 463/17    |
| 5,342,049 | 8/1994  | Wichinsky et al. .... | 273/119 R |
| 5,344,145 | 9/1994  | Chadwick et al. ....  | 463/31    |

**FOREIGN PATENT DOCUMENTS**

|         |        |                       |
|---------|--------|-----------------------|
| 333338  | 9/1989 | European Pat. Off. .. |
| 1474617 | 3/1967 | France ..             |
| 3700861 | 7/1988 | Germany ..            |
| 4014477 | 7/1991 | Germany ..            |

**OTHER PUBLICATIONS**

*An Illustrated Price Guide To The 100 Most Collectible Trade Stimulators* By: Richard M. Bueschel; pp. 21, 29, 83; Published In U.S., 1978.

*Slots 1*; By: Richard M. Bueschel; pp. 136, 142; Published in U.S. in 1978, Revised in 1981 and 1988.

Ad and Cover of *Intergaming Magazine*, Published in England in Jun., 1995.

*Slot Machines on Parade*, By: Robert N. Geddes; p. 128; Published in U.S. Oct. 1980.

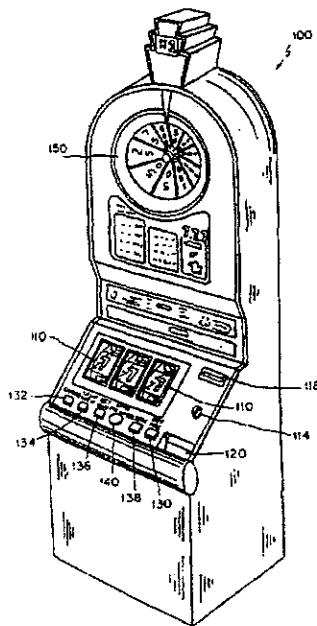
*Slot Machines*, By: Marshall Fey; pp. 126 and 150; Published in Reno, Nevada in 1983, 2nd 1989, 3rd 1991. Cover and pp. 91 and 101 of *Intergame Magazine* Published in England in Jun., 1995.

Primary Examiner—Benjamin H. Layno  
Attorney, Agent, or Firm—Galgano & Burke

**[57] ABSTRACT**

Gaming devices comprising a standard gaming unit, e.g., three reels, and a discernible additional payout indicator, e.g., a rotatable wheel. A preferred bonus payout indicator is clearly visible by the player and is actuatable when the reels of the slot machine stop on certain predetermined indicia. A preferred embodiment further comprises a payout multiplier which displays a plurality of values by which a payout may be multiplied.

69 Claims, 4 Drawing Sheets



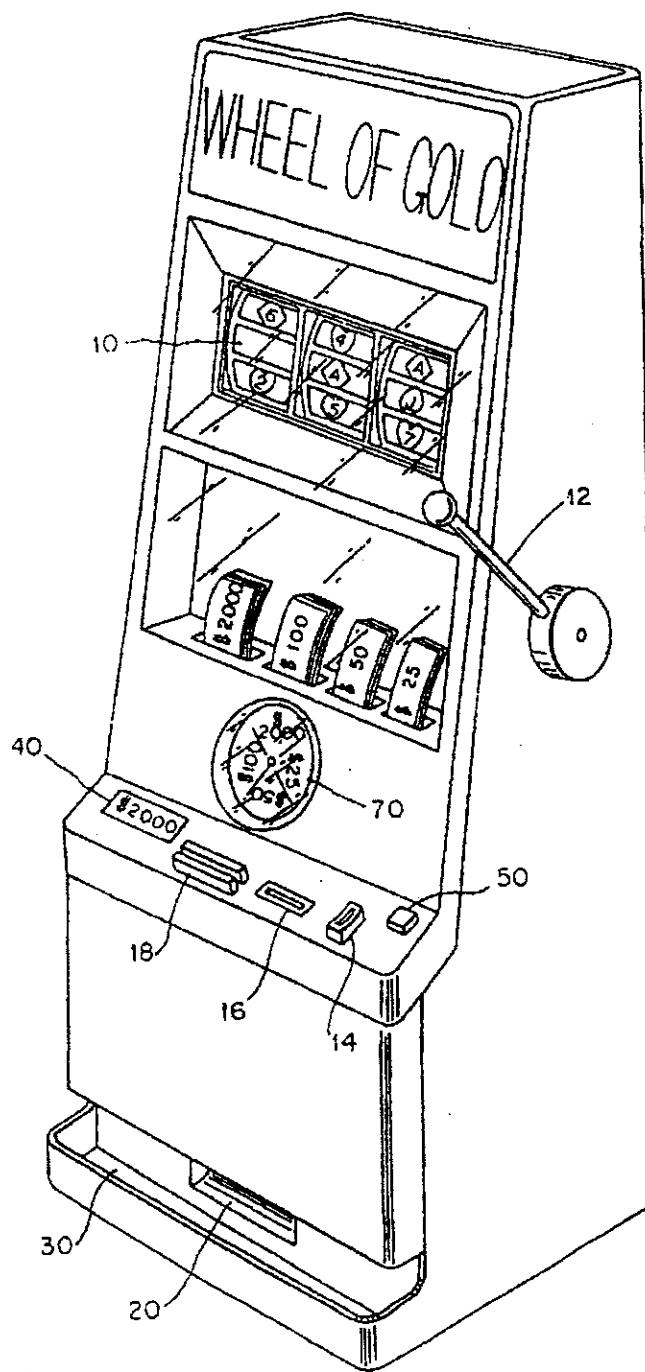
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FIG. 1



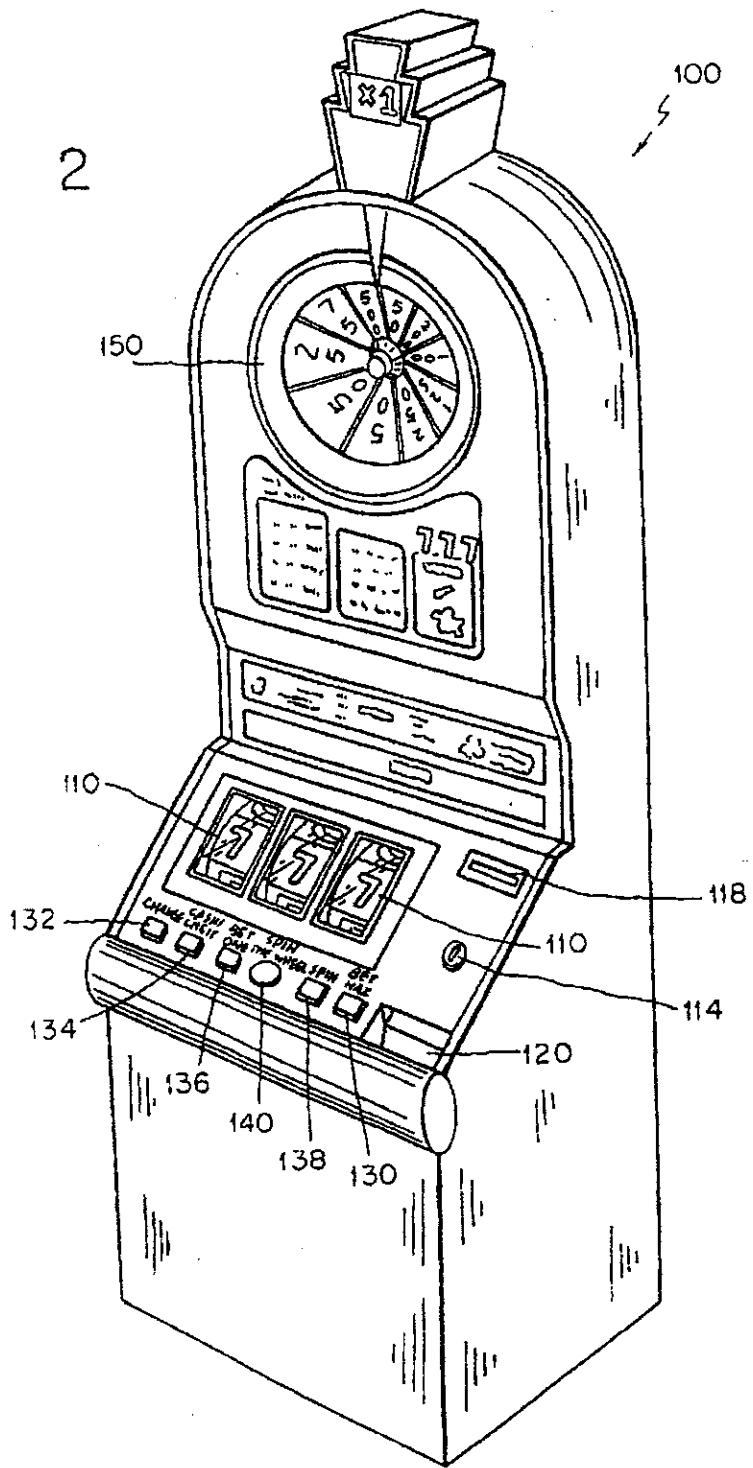
U.S. Patent

Dec. 15, 1998

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FIG. 2



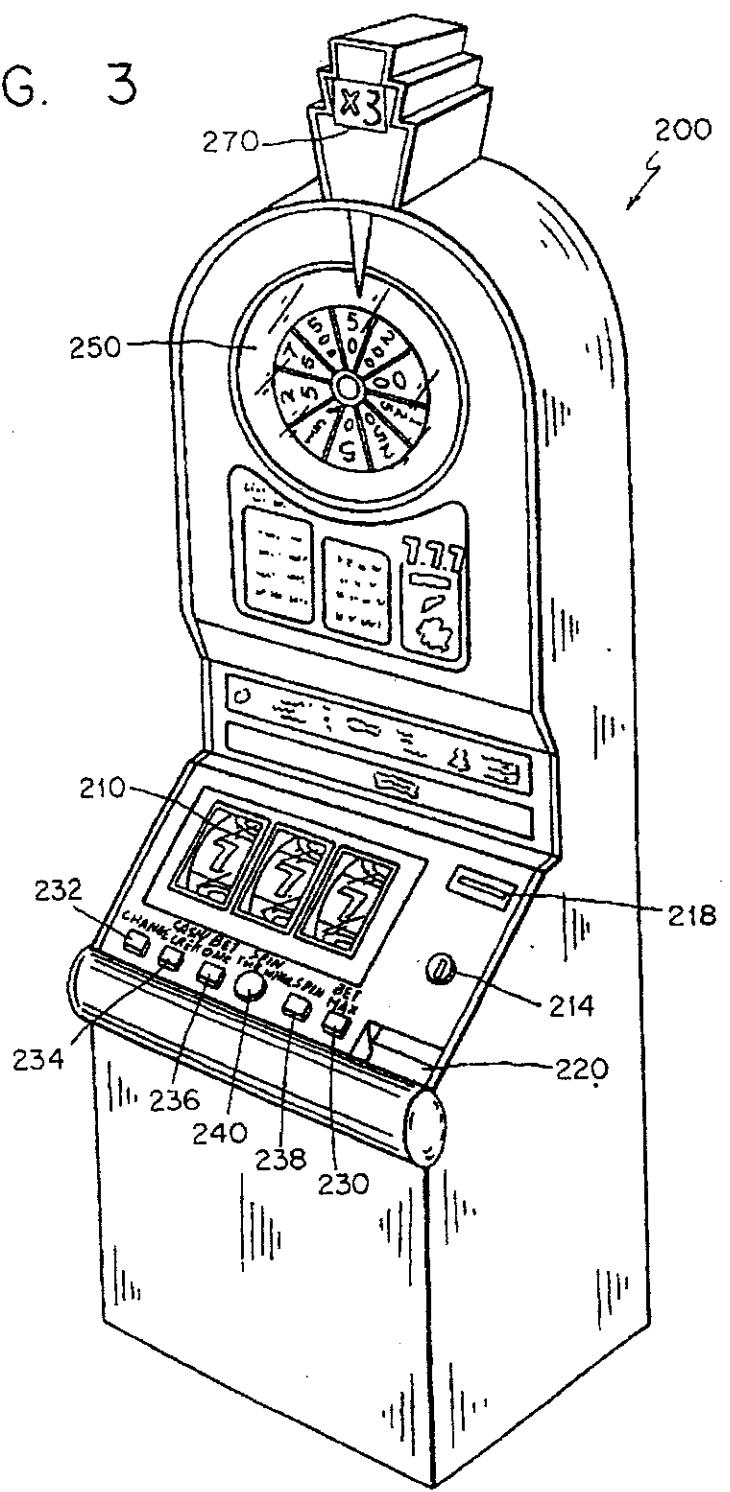
U.S. Patent

Dec. 15, 1998

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FIG. 3



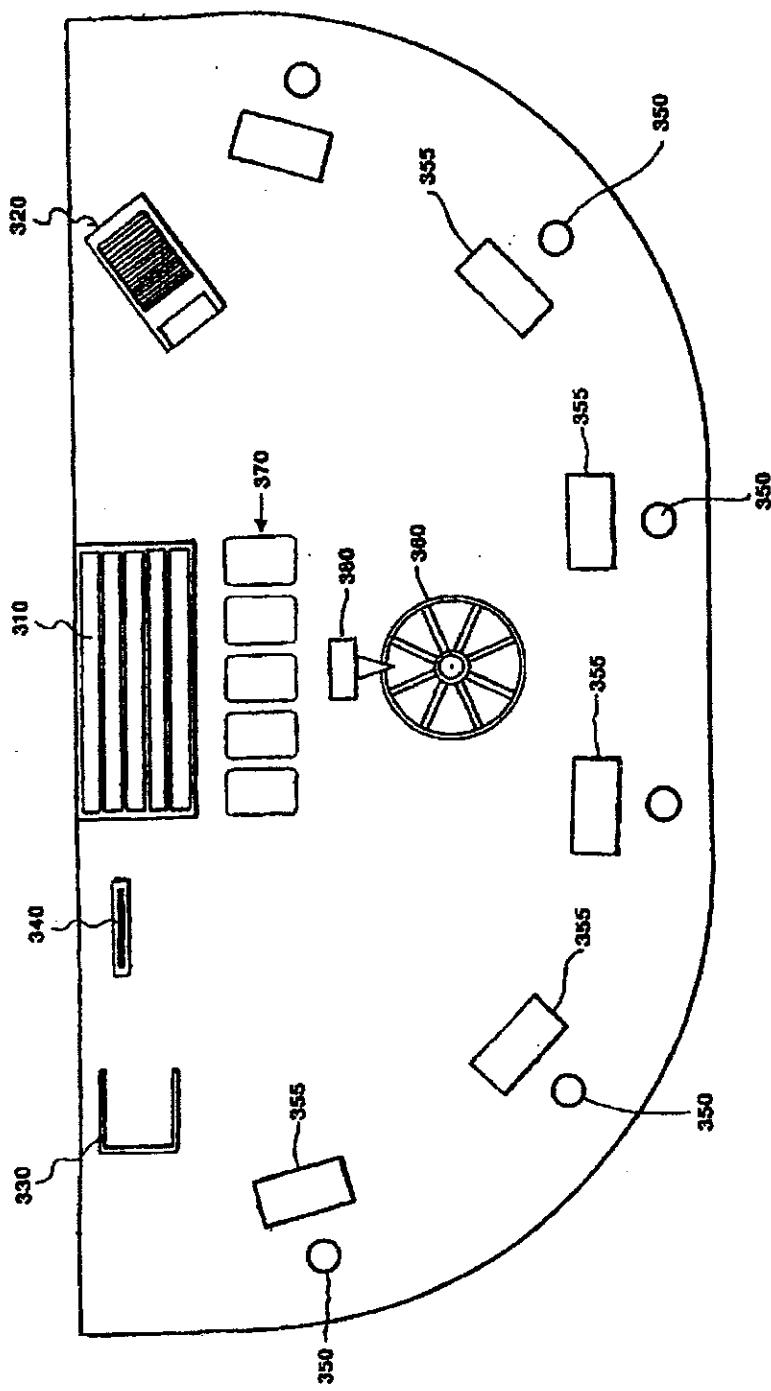
U.S. Patent

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FIG. 4



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**METHOD OF PLAYING GAME AND  
GAMING GAMES WITH AN ADDITIONAL  
PAYOUT INDICATOR**

**RELATED APPLICATION DATA**

This application is a continuation-in-part of U.S. patent application Ser. No. 08/311,783 filed on Sep. 23, 1994, now abandoned.

The present invention is directed to novel gaming devices and, more particularly, to gaming devices comprising at least primary and secondary events capable of providing at least one of a plurality of payouts.

**BACKGROUND OF THE INVENTION**

Games of chance have been enjoyed by people for years and have enjoyed widespread popularity in recent times. Many people enjoy playing a wide variety of games that they have not played before. Playing new games adds to the excitement of this recreational activity particularly when some form of "gaming" is involved. As used herein, the term "gaming" and "gaming devices" are used to indicate that some form of wagering is involved, and that players must make wagers of value, whether actual currency or some equivalent of value, e.g., token or credit.

One popular game of chance that has long been enjoyed by many players is the slot machine. Conventionally, a slot machine is configured for a player to input something of value, e.g., a standard denomination of currency or house token or other representation of currency or credit, and then to permit the player to activate the device which causes a plurality of reels to spin and ultimately stop to display a random combination of some form of indicia, for example, numbers or symbols. If this display contains one of a preselected plurality of winning combinations, the machine releases money into a payout chute or onto a credit meter for the player. For example, if a player initially wagered two coins of a national currency and that player won a high payout, that player may receive fifty coins of the same denomination in return.

Since it is desirable to offer players games which they have not played before, it would be desirable to provide a player with new games and additional opportunities to receive winning payouts.

Those familiar with games involving winning payouts, such as the popular television game show entitled "WHEEL OF FORTUNE" will realize that as players and observers watch a large wheel spin and gradually come to rest, the players experience a heightened feeling of anticipation and excitement as the wheel is slowing down to indicate a possible prize.

It would therefore also be desirable to provide a payout indicator which is discernible by a player and/or other observers.

**SUMMARY OF THE INVENTION**

Various embodiments of the present invention comprise methods of playing games, gaming devices and table games utilizing a primary game, e.g., rotatable reels, and at least one discernible indicia of a secondary game, preferably comprising a payout indicator. The secondary game is separate from the primary game either physically or temporally.

According to the most preferred embodiments, a bonus payout indicator is clearly visible to a player and is operable when primary reels of a primary game slot machine stop on

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certain predetermined indicia. According to one preferred embodiment of the present invention, a secondary payout indicator is in the form of a rotatable bonus wheel which can be caused to spin automatically or in response to some action by a player, e.g., the player pushing a button, when the primary game indicates one of a predetermined plurality of indicia. The wheel is caused to gradually reduce speed and when the wheel stops, a pointer indicates the payout to be awarded to the player.

Another preferred embodiment of the present invention further comprises a discernible multiplier which provides the ability to change either the payout from the primary gaming unit or the secondary payout indicator, or both. As described in more detail below, it is within the scope of the present invention to provide a payout from the primary gaming unit, a payout indicated by the secondary indicator only, a payout from the primary gaming unit or the secondary indicator as changed by the multiplier, or a separate, plurality of payouts from the primary gaming unit and the secondary indicator either with or without modification by a multiplier.

According to one preferred embodiment of the present invention, the mechanical bonus payout indicator is electronically operated and is linked to a random number generator which determines where the secondary indicator actually stops.

According to another preferred embodiment of the present invention, when the primary unit stop on one of a predetermined plurality of winning indicia sets, a second event actuator is placed in an active state. According to this embodiment, a person, such as the player, must actuate the actuator in order to operate the bonus indicator.

According to another embodiment of the present invention, the bonus actuator requires operator intervention so that a player must involve a casino attendant who can activate the bonus indicator.

According to another preferred embodiment of the present invention, the bonus indicator is connected to a drive mechanism which gradually reduces the rate of spin of the bonus wheel before the bonus wheel stops.

Still other embodiments of the present invention comprise gaming devices having electronic means for displaying indicia of rotatable reels such as a video screen and/or means for displaying indicia of a secondary payout indicator, such as a video screen. The present invention also comprises methods for playing a game of chance. One preferred method comprises the steps of displaying a first randomly selected combination of indicia, said displayed indicia selected from the group consisting of slot reels, indicia of at least one reel, indicia of at least one playing card, and combinations thereof; generating at least one signal corresponding to at least one select display of first indicia; providing at least one discernible indicia of a mechanical bonus indicator, said bonus indicator indicia indicating at least one of a plurality of possible payouts, wherein said bonus indicator indicia providing means is operatively connected to said first, standard gaming unit and actuatable in response to said signal. According to one preferred embodiment, the discernible indicia of mechanical bonus indicator gradually reduces the rate of movement of the mechanical bonus indicator for some period of time prior to actually providing the discernible indicia of a payout. According to another embodiment, a multiplier is provided to multiply at least one payout by a multiple which is most preferably indicated to a player. The multiple can preferably sequentially change as discernible indicia change. For

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example, a plurality of multiples can be synchronized with a plurality of discernable indicia on the mechanical bonus indicator such that the multiple changes as the payout indicated changes.

Further embodiments of the present invention comprises a method of conducting a game of chance comprising the steps of providing a player with an opportunity to place a wager; displaying a randomly selected combination of indicia, said displayed indicia selected from the group consisting of reels, indicia of at least one and preferably a plurality of reels, indicia of at least one and preferably a plurality of playing cards, and combination thereof; generating at least one signal corresponding to at least one select display of said indicia; providing at least one discernible indicia of a mechanical bonus indicator, said bonus indicator indicia indicating at least one of a plurality of possible bonuses, wherein said bonus indicator indicia is in the form of a wheel or reel and is actuatable in response to said signal.

#### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view one of a gaming device of one embodiment of the present invention.

FIG. 2 is another embodiment of a gaming device of the present invention.

FIG. 3 illustrates an alternative embodiment of the present invention.

FIG. 4 is an alternative embodiment of the present invention in the form of a table game.

#### DETAILED DESCRIPTION

The various embodiments of the present invention are designed to provide added excitement to a board/table game or gaming device in order to increase the enjoyment to players and to serve as an added attraction to potential players. One preferred embodiment of the present invention, illustrated in FIG. 1, comprises a primary gaming unit which comprises three rotatable reels 10, each of which comprise a plurality of indicia on the periphery thereof. The illustrated gaming device comprises a mechanical lever 12, coin slot 14, currency validator 16 and a credit card validator 18. In a manner which will be recognized by those skilled in the art, each reel 10 is designed to rotate and then stop in order to visually display at least one, and preferably a number of indicia. If the collection of indicia displayed by the three reels is one of a predetermined plurality of winning indicia sets, then the player can typically be provided with a winning payout either through coin chute 20 which deposits winnings into a coin trough 30 or by increasing the player's credits in a credit window 40.

According to one aspect of the present invention, when the reels 10 display at least one of a plurality of predetermined winning indicia or indicia sets then the player is provided with an opportunity for a secondary payout. According to this illustrated embodiment of the present invention, a bonus actuator button 50 is placed in an operative state when reels 10 display a bonus indicia set. A player must then depress bonus actuator 50 in order to start bonus indicator 70 spinning. In the illustrated embodiment, bonus indicator 70 is in the form of a rotatable wheel. The wheel may be a carnival-type wheel comprising pegs and a clapper or could take one or more other forms, such as a fanciful wheel typically used in a roulette game as shown in the embodiment of FIG. 2. If a preferred motor driven wheel is utilized, it is preferably linked to some random value generator in order to randomly determine where the wheel

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will actually stop. In order to enhance the playing experience, sound effects corresponding to a clapper slapping against pegs of a carnival wheel are preferably provided as the wheel passes from one segment to another. The bonus indicator 70 is also preferably controlled so that the rate of spin is reduced, most preferably gradually reduced, prior to stopping in order to simulate a mechanical spinning wheel.

The facing surface of bonus indicator 70 of FIG. 1 comprises four distinct areas bearing indicia of the bonus payout to the player. In the illustrated embodiment, the bonus indicator has areas indicating bonuses of \$25.00, \$50.00, \$100.00, and \$2,000.00. When bonus indicator 70 stops, an indicator (not shown) will indicate the area on the bonus wheel corresponding to the amounts of the bonus to be provided to the player.

In a manner which will be appreciated by those skilled in the art, bonus indicator 70 can be operatively linked to a "payout" mechanism which provides a bonus payout to a player through currency chute 20 or by increasing the amount of winnings shown in credit window 40. As stated above, the payout of the bonus indicator can be in addition to a standard payout by the primary gaming unit or can be in place of the payout normally associated with the primary gaming unit.

Those familiar with gaming and game shows, will appreciate that players and observers typically experience a heightened level of anticipation and excitement as they observe one or more moving objects approaching a winning position. It is therefore most preferred for the bonus indicator of the present invention to be readily discernible, e.g., clearly visible and/or audible to the player.

According to another preferred embodiment of the present invention, a bonus indicator is connected to a electronic control unit, for example a motor, which gradually decreases the rate of movement of the bonus indicator before the bonus indicator stops. According to this embodiment of the present invention, players can be provided with a realistic sense of a totally mechanical indicator. Those skilled in the art will appreciate that such a control unit can also readily be connected to a random generator which will randomly select the winning payout according to a predetermined frequency of occurrence for each individual bonus payout, and then cause the bonus indicator to stop at the desired area. Those skilled in the art will also appreciate that other mechanisms can be utilized for gradually decreasing the rate of movement of the secondary payout indicator, e.g., a controlled braking system.

According to another embodiment of the present invention, when reels 10 display an indicia set which will provide a bonus, the bonus indicator becomes activatable but requires intervention by a house attendant, such as a casino attendant, in order to activate the bonus indicator. According to this embodiment of the present invention, the casino is provided with greater control over the actuation of the bonus indicator and, if desired, can accompany the actuation of the bonus indicator with great fanfare. It will be appreciated that the amounts of the bonus indicated in the figures are merely for purposes of illustration and, if desired, one of the amounts on the bonus indicator can have a significantly greater value. For example, one of the areas on the bonus indicator may correspond to a new automobile, a luxury vacation or a very large sum of money.

While the illustrated embodiment of the present invention in FIG. 1 is generally in the form of a rotatable wheel, other visible, mechanical indicia can be provided, whether con-

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trolled totally mechanically, electro-mechanically, or electronically without departing from the scope of the present invention.

As shown in FIG. 1, in order to provide additional levels of excitement, indicia of the possible bonuses are preferably visibly displayed within the slot machine. For example, in one illustrated embodiment, a shelf is preferably displayed comprising piles of currency equal to the amounts on the bonus indicator. While actual cash is preferred, the slot machine may also be provided with fake currency or simply indicia of actual currency or the other bonus prizes.

A preferred embodiment of the present invention is illustrated in FIG. 2 wherein a gaming device 100 comprises a primary gaming unit in the form a standard three-reel slot machine which displays reels 110. Suitable controls and currency mechanisms including a coin slot 114, bill validator 118, payout shoot 120 are provided. Furthermore, suitable player controls including CHANGE button 132, CASH/CREDIT button 134, BET ONE button 136, SPIN button 138 and BET MAX button 130 are also provided.

In addition to these standard controls the control panel of this preferred illustrated embodiment of the present invention comprises a SPIN THE WHEEL button 140 which becomes actuatable when the primary gaming unit, as indicated by reels 110, has randomly selected one of a plurality of predetermined indicia sets. While the primary gaming unit shown in the lower portion of the cabinet of gaming device 100 will typically have the ability to provide a plurality of winning payouts, the SPIN THE WHEEL button 140 can become actuatable when the stopped reels 110 indicate some subset of the primary unit's winning indicia, when any one of the winning reel indicia are displayed, or further in response to one or more other predetermined indicia, or a combination thereof. For example, the SPIN THE WHEEL feature, or some other secondary game, can be actuated or become activatable in response to a single indicia indicated on one of the reels or reel indicia.

When the SPIN THE WHEEL button 140 is actuated by a player, bonus wheel 150 is caused to rotate and randomly select and display one of a plurality of different areas. According to the preferred illustrated embodiment, all of the bonus areas indicate an increased winning value for the player. However, it is within the scope of the present invention to provide non-monetary prizes or losing spaces wherein no additional prize is provided and/or wherein the prize normally associated with the indicia shown on the primary gaming unit reels 110 is reduced. In the illustrated embodiment, a pointer 160 advantageously indicates the result of the bonus indicator 150.

In addition to the bonus wheel 150, this preferred illustrated embodiment of the present invention also comprises a bonus multiplier 170. The multiplier 170 preferably randomly selects a value by which the bonus indicated by bonus wheel 150 is multiplied. For example, the bonus indicator 170 can have an LED screen which cycles through multipliers of "times one", "times two" and "times three" which will indicate that the bonus is as indicated, doubled, or tripled, respectively. The multiplier 170 can be programmed to select a multiplier either totally randomly or according to some other predetermined frequency of occurrence wherein certain multipliers will occur more frequently than other multipliers. While this illustrated embodiment comprises whole number multipliers, it is also within the scope of the present invention to utilize values other than whole numbers or to include multipliers which will result in a decrease in the value shown by the bonus indicator 150. For example, a

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multiplier sequence could include a "times zero" value. When bonus wheel indicator 150 is not in use, the multiplier LED window can be set to an attract mode wherein a message is displayed to players or potential players. For example, the LED display could show a message, either in complete form or can be set to sequentially display either words or individual letters, such as "S P I N - T H E - W H E E L".

According to the various embodiments of the present invention, the bonus multiplier or additional payout multiplier is most preferably synchronized with the movement of the rotatable wheel or indicia of a rotatable reel, such that the multiplier value will change as each wheel segment passes the indicator. The most preferred embodiments of the present invention additionally comprise audible signals, such as the clicking of a clapper of the type found on actual spinning wheel comprising a clapper indicator and pegs which strike the clapper. The audible signals are preferably also synchronized with the segments of the wheel such that an audible signal is provided as the wheel moves from one segment to another. This advantageously provides the effect of a mechanical wheel comprising pegs moving past a mechanical clapper.

FIG. 3 illustrates a less preferred embodiment of the present invention wherein a gaming device 200 comprising similar controls as the controls illustrated in the embodiment of FIG. 3. In this illustrated embodiment, and wherein a bonus indicator 250 is in the form of an electronically generated image, such as a video screen or an LED display and provides discernible indicia, e.g., a visual video display, of a bonus wheel. For example, the video display can show a wheel of the type used in a roulette game such as the wheel 150 illustrated in FIG. 2.

The slot machine shown in FIG. 3 comprises a video display 210, such as a video screen, which displays three reels 110, each of which comprise a plurality of indicia. In addition, this slot machine comprises a video display 250, such as a second video screen, for displaying a bonus payout indicator. While separate screens are preferred, both the reels and the bonus payout indicator could be displayed on the same video screen. According to this embodiment of the present invention, the bonus payout indicator displays indicia of a wheel or a reel.

In a manner known in the art, the gaming device comprises a coin slot 214, a currency validator 218, and a coin chute 220. After placing a wager, a player determines the amount of his wager by either pressing the BET ONE button 236 or the BET MAX button 230. After the player has selected the amount of his wager, he depresses the SPIN button 238 which "spins" the reels shown in video display window 210.

Each indicia of a displayed reel 210 is designed to indicate rotation and then stop in order to visually display at least one, and preferably a number of indicia. When reels 210 display a particular indicia set or one of a predetermined plurality of indicia sets, then the additional payout mode is activated and video display 250 displaying payout indicator is placed in an operable state. In this illustrated embodiment, the displayed payout indicator 250 displays an indicia of a rotating wheel comprising a plurality of distinct areas bearing indicia of payouts to the player. Payout indicator 250, is caused to selectively indicate one of the plurality of indicia, either automatically, upon intervention of a casino or house attendant, or upon a player depressing SPIN THE WHEEL button 240 in order to start indicator 250 spinning. It will be appreciated that the amounts of the payout indicated in FIG.

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2 are merely for purposes of illustration and, if desired, one of the amounts on the bonus indicator can have a greater value, e.g., a new automobile, a luxury vacation or large sum of money which may be collected subsequently, or lesser values, e.g., no payout.

The displayed reels 210 and displayed bonus indicator 250 can be operably controlled by suitable controls to gradually slow down as they come to a complete stop, displaying a selected reel indicia and a bonus indicia, respectively.

The embodiment of the present invention illustrated in FIG. 2 is considered most preferable since it is believed that players prefer to see actual slot reels and an actual bonus wheel spinning in a gaming device. Other, less preferred embodiments are also possible while providing some of the advantages of the present invention. Specifically, it is feasible to replace the spinning reels with other forms of standard gaming units, for example, a visible indicia of reels or indicia of playing cards, shown for example on a video screen. It is also possible to replace the wheel with some other discernible indicia of a mechanical bonus indicator which is operatively connected to the first standard gaming unit and which either automatically commences or is actuatable in response to the result provided by the standard gaming unit. According to the present invention, both of the standard gaming unit and bonus indicator are controlled to provide random results.

From the foregoing description, it will be appreciated that embodiments of the present invention, which are specifically directed to gaming and gaming devices, comprise three different indicators. The most preferred embodiments comprise a primary (standard) gaming unit, an additional payout indicator, preferably in the form of a wheel, and a payout multiplier. While the illustrated payout multiplier of the illustrated embodiments is in the form of an electronically selected value, it is also within the scope of the present invention to have a multiplier which involves some skill on the part of a player. For example, according to an additional preferred embodiment of the present invention, a player will shoot actual projectiles, such as coins, at one or more targets in an effort to increase the value of the multiplier. In any of the embodiments of the present invention utilizing a multiplier, the multiplier can affect the value of a payout from the standard gaming unit, the additional payout indicator, or both the standard gaming unit and the payout indicator.

As stated above, the present invention also includes methods of conducting a wagering game of chance comprising the steps of providing a player with an opportunity to place a wager; displaying a randomly selected combination of indicia, said displayed indicia selected from the group consisting of reels, indicia of reels, indicia of playing cards, and combination thereof; generating at least one signal corresponding to at least one select display of said indicia; providing at least one discernible indicia of a mechanical bonus indicator, said bonus indicator indicia indicating at least one of a plurality of possible bonuses, wherein said bonus indicator indicia is in the form of a wheel or reel and is actuatable in response to said signal. A further preferred method comprises the step of displaying at least one value by which a payout may be multiplied.

Another method of the present invention comprises the steps of requiring at least one player to make a wager; displaying at least one randomly selected playing card from a predetermined card indicia set; displaying and rotating a rotatable wheel comprising a plurality of indicia correspond-

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ing to a plurality of prizes if said displayed playing card indicia was one of a preselected plurality of winning card indicia; and determining a winning payout with said wheel, wherein said winning payout is randomly selected.

Another embodiment of the present invention in the form of a table game is illustrated in FIG. 4 wherein a chip rack 310, card shoe 320, discard shoe 330, wager slot 340, betting areas 350, and secondary event wheel 360 are provided. According to this embodiment of the present invention after one or more players have placed wagers in wagering areas 350, a dealer will provide cards to the wagering players in areas 355 and then provide cards to himself in card area 370. After the cards have been dealt, the initial bets can be resolved by comparing the players' cards to the dealer's cards. While the illustrated game is shown as five card stud poker, other games and arrangements can also be utilized without departing from the scope of the present invention. For example, a player's cards can be compared to other player's cards or a predetermined payout schedule, or other card games can be utilized including seven card draw, five card draw poker, black jack, etc.

Upon the happening of a predetermined occurrence, such as the receipt of one of a preselected plurality of card hands, one or more of the players can be given the opportunity to spin the payout indicator 360, which is most preferably electronically operated by an actuation switch. The actuation switch can be within reach of the players for added excitement or can be actuated by the dealer. Alternatively, actuation by a player's actuator switch can require prior actuation of a dealer switch which will then render the player's switch operable. If less than all of the players are going to benefit from the results of payout indicator 360, additional indicators can be positioned proximate the players in order to indicate which players are involved in the spin of payout indicator 360. In a manner similar to that shown in FIG. 2, a payout multiplier 380 is also provided. Sound effects as referenced above and means for gradually decreasing the rate of movement of the payout indicator 360 are also preferably provided.

In addition to the primary gaming unit or primary game, the secondary event, and the multiplier, another preferred aspect of the present invention which can be utilized with all previously described embodiments comprises a DOUBLE-OR-NOTHING feature wherein winning players may wager their winnings in a double-or-nothing fashion. According to this feature of the present invention, a player may be provided with the opportunity to bet on red or black after he has won a game. For this purpose, the rotatable wheels of the present invention are preferably provided with alternating red and black pie-shaped segments. According to this feature, a player can be provided with the opportunity of betting on red or black with the opportunity of doubling his winnings if he makes a correct selection. After the player makes his selection, the wheel would be rotated to determine whether the player has successfully doubled his winnings or has lost those winnings. A player may be provided with the opportunity of utilizing the double or nothing feature several times and/or up to a certain maximum to be determined by the game operator.

What is claimed is:

1. A slot machine comprising:  
means for receiving a wager;  
a plurality of rotatable reels, each of said reels comprising  
a plurality of indicia, wherein said rotatable reels are  
caused to rotate after a wager has been placed and  
subsequently stop thereby displaying a plurality of said  
indicia;

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means for generating at least one signal corresponding to at least one of said reel displays of said indicia; a mechanical, movable bonus payout indicator comprising a wheel for visually indicating one of a plurality of randomly selected bonus payouts to a player, said bonus payout indicator operatively connected to said signal generating means such that said bonus payout indicator will only operate if said signal generating means has generated a signal corresponding to a pre-selected bonus reel display; and means for providing a winning payout, said payout providing means responsive to said signal generating means.

2. A slot machine according to claim 1 further comprising a bonus payout actuator operatively connected to said signal generating means and said bonus payout indicator, wherein said bonus payout actuator is switchable from an inoperable state to an operable state in response to a signal from said signal generating means.

3. A slot machine according to claim 2 wherein said bonus payout indicator will operate only if said bonus payout actuator has been actuated when in said operable state.

4. A slot machine according to claim 1 further comprising visible indications of bonus payouts.

5. A slot machine according to claim 1 wherein said bonus payout indicator comprises a rotatable disc.

6. A slot machine according to claim 1 wherein said bonus payout indicator is electronically operated.

7. A slot machine according to claim 6 further comprising means for gradually decreasing the rate of movement of said bonus payout indicator.

8. A slot machine according to claim 7 wherein said rate decreasing means comprises a motor.

9. A slot machine according to claim 1 wherein said signal generating means generates a plurality of signals corresponding to a plurality of reel displays.

10. A gaming device comprising:  
a plurality of rotatable reels, each of said reels comprising a plurality of indicia, wherein said rotatable reels are caused to rotate and subsequently stop thereby displaying a plurality of said indicia;  
means for generating at least one signal corresponding to at least one of a plurality of displays of said indicia; a movable, mechanical bonus payout indicator for visually indicating one of a plurality of bonus payouts to a player, said bonus payout indicator operatively connected to said signal generating means such that said bonus payout indicator can indicate a bonus payout only if said signal generating means has generated at least one signal; and  
means for providing a winning payout corresponding to a randomly selected bonus payout indicated by said mechanical bonus payout indicator.

11. A gaming device according to claim 10 further comprising a bonus payout actuator operatively connected to said signal generating means and said bonus payout indicator, wherein said bonus payout actuator is switchable from an inoperable state to an operable state in response to a signal from said signal generating means.

12. A gaming device according to claim 11 wherein said bonus payout indicator will operate only if said bonus payout actuator has been actuated when in said operable state.

13. A gaming device according to claim 10 further comprising visible indications of bonus payouts.

14. A gaming device according to claim 10 wherein said bonus payout indicator comprises a rotatable wheel.

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15. A gaming device according to claim 14 further comprising means for gradually decreasing the rate of movement of said rotatable wheel.

16. A gaming device according to claim 10 wherein said bonus payout indicator is electronically operated.

17. A method of conducting a game of chance comprising the steps of:

providing a player with an opportunity to place a wager to actuate a primary gaming unit;  
said primary gaming unit displaying a randomly selected primary display to a player, said display comprising an indicia set from a plurality of slot reels;

providing a secondary gaming unit having a plurality of possible bonus payouts, said second gaming unit providing a player with a randomly selected bonus payout and displaying said bonus payout with a movable mechanical bonus indicator in the form of a disc if said primary display is a preselected bonus indicia set.

18. A method of conducting a game of chance according to claim 17 wherein said step of displaying said bonus payout comprises the step of indicating said bonus payout on a bonus wheel indicator.

19. A gaming device comprising:  
a first gaming unit comprising means for randomly selecting and displaying a first indicia set comprising a plurality of indicia from a plurality of possible indicia sets, wherein the possible indicia sets comprise at least one winning set, and said gaming unit indicates to a player that the player has won a prize if a winning indicia set has been selected,

a second display comprising means for randomly selecting and displaying at least one additional indicia of a bonus payout to change the prize indicated by the first gaming unit, said additional indicia selected from a plurality of possible indicia when said first indicia set is one of a preselected plurality of winning indicia sets, said additional indicia displaying means comprising indicia of a wheel element and an indicator, and wherein said indicia of a wheel element and said indicator are relatively movable.

20. A gaming device according to claim 19 further comprising means for gradually reducing the rate of relative movement of said wheel element and said indicator.

21. A gaming device according to claim 19 wherein said indicia of a movable wheel element comprises a mechanical wheel.

22. A gaming device according to claim 19 wherein said additional indicia displaying means displays a plurality of possible bonus payouts.

23. A gaming device according to claim 22 wherein said additional indicia displaying means guarantees a player an additional payout.

24. A gaming device according to claim 22 wherein said additional indicia displaying means provides a player with an opportunity for one of a plurality of additional payouts which is determined randomly.

25. A slot machine according to claim 19 further comprising means for providing a player with an opportunity to double a winning payout after said secondary indicating unit has provided a discernible indicia of a payout indicator.

26. A slot machine comprising:  
means for receiving a wager;  
a plurality of rotatable reels, each of said reels comprising a plurality of indicia, wherein said rotatable reels are caused to rotate after a wager has been placed and subsequently stop thereby displaying a plurality of said indicia;

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means for generating at least one signal corresponding to at least one of said reel displays of said indicia; a mechanical, movable payout indicator comprising a wheel for visually indicating one of a plurality of randomly selected payouts to a player, said payout indicator operatively connected to said signal generating means such that said payout indicator will only operate if said signal generating means has generated a signal corresponding to a preselected reel display; means for gradually decreasing the rate of movement of said payout indicator; and means for providing a winning payout, said payout providing means responsive to said signal generating means.

27. A slot machine according to claim 26 wherein said rate decreasing means comprises a motor.

28. A slot machine according to claim 26 further comprising a payout actuator operatively connected to said signal generating means and said payout indicator, wherein said payout actuator is switchable from an inoperable state to an operable state in response to a signal from said signal generating means.

29. A slot machine according to claim 27 wherein said payout indicator will operate only if said payout actuator has been actuated when in said operable state.

30. A slot machine according to claim 26 further comprising visible indications of payouts.

31. A slot machine according to claim 26 wherein said payout indicator is electronically operated.

32. A slot machine according to claim 26 further comprising means for providing a player with an opportunity to double a winning payout after said secondary indicating unit has provided a discernable indicia of a payout indicator.

33. A gaming device comprising:

a primary gaming unit comprising means for displaying randomly selected indicia, said displayed indicia selected from the group consisting of at least one reel, a plurality of reels, at least one indicia of a reel, a plurality of reel indicia, at least one indicia of a playing card, a plurality of playing card indicia, and combinations thereof;

means for actuating said primary gaming unit and displaying a plurality of indicia;

means for generating at least one signal corresponding to at least one preselected display of indicia by said primary gaming unit, wherein at least one of said preselected displays comprises one winning indicia and at least one non-winning indicia;

a secondary indicating unit comprising means for providing at least one discernible indicia of a movable payout indicator, said discernible indicia indicating at least one of a plurality of randomly selected possible payouts, wherein said providing means is operatively connected to said primary gaming unit and is actuatable in response to said signal.

34. A gaming device according to claim 33 comprising means for gradually decreasing the rate of change of said discernable indicia of a payout indicator.

35. A gaming device according to claim 33 further comprising a payout multiplier.

36. A gaming device according to claim 35 wherein said payout multiplier displays a plurality of multiples by which a winning payout can be multiplied.

37. A gaming device according to claim 36 wherein said payout multiplier display is synchronized with said secondary indicating unit such that the displayed multiplier changes when different discernable indicia of a payout are indicated.

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38. A gaming device according to claim 35 wherein said payout multiplier sequentially displays a plurality of multiples by which a winning payout is multiplied.

39. A gaming device according to claim 33 further comprising means for providing a player with an opportunity to double a winning payout after said secondary indicating unit has provided a discernable indicia of a payout indicator.

40. A gaming device comprising:

a primary gaming unit comprising means for displaying randomly selected indicia, said displayed indicia selected from the group consisting of at least one reel, a plurality of reels, at least one indicia of a reel, a plurality of reel indicia, at least one indicia of a playing card, a plurality of playing card indicia, and combinations thereof;

means for actuating said primary gaming unit and displaying a plurality of indicia;

means for generating at least one signal corresponding to at least one preselected display of indicia by said primary gaming unit;

a secondary indicating unit comprising means for providing at least one discernible indicia of a movable payout indicator, said discernible indicia indicating at least one of a plurality of randomly selected possible payouts, wherein said providing means is operatively connected to said primary gaming unit and is actuatable in response to said signal; and

means for indicating a payout multiplier.

41. A gaming device according to claim 40 wherein said payout multiplier displays a plurality of multiples by which a winning payout can be multiplied.

42. A gaming device according to claim 40 wherein said payout multiplier sequentially displays a plurality of multiples by which a winning payout is multiplied.

43. A gaming device according to claim 42 wherein said payout multiplier display is synchronized with said secondary indicating unit such that the displayed multiplier changes when different discernable indicia of a payout are indicated.

44. A gaming device according to claim 40 wherein at least two of said primary gaming unit display, said discernible indicia of a payout, and said payout multiplier are randomly selected.

45. A gaming device according to claim 40 wherein said primary gaming unit display, said discernible indicia of a payout, and said payout multiplier are randomly selected.

46. A gaming device according to claim 40 further comprising means for providing a player with an opportunity to double a winning payout after said secondary indicating unit has provided a discernable indicia of a payout indicator.

47. A gaming device according to claim 40 comprising means for gradually decreasing the rate of change of said discernable indicia of a payout indicator.

48. A gaming device comprising:

a primary gaming unit comprising means for displaying randomly selected indicia, said displayed indicia selected from the group consisting of at least one reel, a plurality of reels, at least one indicia of a reel, a plurality of reel indicia, at least one indicia of a playing card, a plurality of playing card indicia, and combinations thereof;

means for actuating said primary gaming unit and displaying a plurality of indicia;

means for generating at least one signal corresponding to at least one preselected display of indicia by said primary gaming unit;

a secondary indicating unit comprising means for providing at least one discernible indicia of a movable payout

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indicator, said discernible indicia indicating at least one of a plurality of randomly selected possible payouts, wherein said providing means is operatively connected to said primary gaming unit and is actuatable in response to said signal; and  
 means for gradually decreasing the rate of change of said discernible indicia of a payout indicator.

49. A gaming device according to claim 48 wherein said discernible indicia of a payout indicator is movable and said rate decreasing means reduces the rate of movement of said discernible indicia of a payout indicator. 10

50. A gaming device according to claim 48 wherein said discernible indicia comprises a wheel.

51. A gaming device according to claim 48 wherein said wheel is rotatable.

52. A gaming device according to claim 48 wherein said first, standard gaming unit comprises indicia of reels.

53. A gaming device according to claim 52 wherein said discernible indicia comprises at least one reel.

54. A gaming device according to claim 48 wherein said primary gaming unit comprises indicia of reels. 20

55. A gaming device according to claim 48 wherein said first, standard gaming unit comprises indicia of playing cards.

56. A gaming device according to claim 48 further comprising means for generating at least one discernible indicia of a payout multiplier.

57. A gaming device according to claim 56 wherein said multiplier generating means broadcasts a plurality of values by which a payout may be multiplied.

58. A gaming device according to claim 56 wherein said multiplier generating means broadcasts at least one message other than a multiplier by which a payout may be multiplied.

59. A gaming device according to claim 56 wherein said multiplier generating means is randomly controlled.

60. A gaming device according to claim 56 wherein said multiplier generating means is controlled, at least in part, by a player's skill.

61. A gaming device according to claim 48 further comprising means for receiving player input,

40 said input receiving means is operatively connected to said providing means for actuating said providing means, and

wherein said input receiving means receives said signal.

62. A gaming device according to claim 48 wherein said providing means comprises a video screen.

63. A gaming device according to claim 62 wherein said providing means comprises an audio speaker.

64. A gaming device according to claim 48 wherein said providing means comprises an audio speaker. 50

65. A gaming device comprising:

a first, standard gaming unit for displaying a randomly selected combination of indicia, said displayed indicia

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selected from the group consisting of reels, indicia of reels, indicia of playing cards, and combinations thereof;

means for actuating said standard gaming unit and displaying a plurality of indicia;

means for generating at least one signal corresponding to at least one select display of indicia;

a secondary gaming unit comprising a means for providing at least one discernible indicia of a movable mechanical payout indicator, said providing means indicating at least one of a plurality of randomly selected additional payouts, wherein said providing means is operatively connected to said first, standard gaming unit and actuatable in response to said signal; and

means for generating at least one discernible indicia of a payout multiplier.

66. A gaming device according to claim 65 wherein said multiplier generating means broadcasts a plurality of values by which a payout may be multiplied.

67. A gaming device according to claim 65 wherein said payout indicating means further comprises indications that a player will receive a reduced payout.

68. A gaming device according to claim 65 wherein said payout indicating means further comprises indications that a player will not receive a payout.

69. A gaming device comprising:

30 a primary gaming unit comprising means for displaying randomly selected indicia, said displayed indicia selected from the group consisting of at least one reel, a plurality of reels, at least one indicia of a reel, a plurality of reel indicia, at least one indicia of a playing card, a plurality of playing card indicia, and combinations thereof;

means for actuating said primary gaming unit and displaying a plurality of indicia;

means for generating at least one signal corresponding to at least one preselected display of indicia by said primary gaming unit;

25 a secondary indicating unit comprising means for providing at least one discernible, indicia of a movable payout indicator, said discernible indicia indicating at least one of a plurality of randomly selected payouts, wherein said providing means is operatively connected to said primary gaming unit and becomes actuatable in response to said signal; and

35 a switch operatively connected to said providing means by which a player can activate said providing means.

\* \* \* \* \*

UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION

PATENT NO. : 5,848,932

DATED : December 15, 1998

INVENTOR(S) : William R. Adams

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Title page, item [63],

"RELATED U.S. APPLICATION DATA" to read as follows:

--Continuation-in-part of Serial No. 311,783, filed on September 23, 1994, now abandoned, and continuation-in-part of Serial No. 622,430, filed March 25, 1996, which issued as U.S. Patent No. 5,823,874 on October 20, 1998--

In Col. 1, line 9, before the period ("."), please add

--and is a continuation-in-part of Serial No. 622,430, filed on March 25, 1996, now U.S. Patent No. 5,823,874--

Signed and Sealed this  
Twelfth Day of September, 2000

Attest:



Q. TODD DICKINSON

Attesting Officer

Director of Patents and Trademarks

**EXHIBIT N**



**United States Patent [19]**  
Baerlocher et al.

[11] Patent Number: 5,788,573  
[45] Date of Patent: Aug. 4, 1998

[54] ELECTRONIC GAME METHOD AND APPARATUS WITH HIERARCHY OF SIMULATED WHEELS

[75] Inventors: Anthony J. Baerlocher, Carson City; Robert W. Crowder, Jr., Reno, both of Nev.

[73] Assignee: International Game Technology, Reno, Nev.

[21] Appl. No.: 628,586

[22] Filed: Mar. 22, 1996

[51] Int. Cl. 6 A63F 9/24; A63F 5/00  
[52] U.S. Cl. 463/16; 463/26; 463/25;  
463/9; 273/138.2

[58] Field of Search 463/1, 9, 12, 13,  
463/16, 20, 25, 26, 27, 30, 31, 36, 40-42;  
364/410, 412; 273/139, 143 R, 138.2, 138.1

[56] References Cited

U.S. PATENT DOCUMENTS

|           |         |                    |           |
|-----------|---------|--------------------|-----------|
| 4,448,419 | 5/1984  | Telmses            | 273/143 R |
| 4,711,451 | 12/1987 | Pajak et al.       | 273/143 R |
| 4,805,907 | 2/1989  | Hagiwara           | 463/42    |
| 4,837,728 | 6/1989  | Banrie et al.      | 463/27    |
| 4,964,638 | 10/1990 | Ishida             | 463/27    |
| 4,998,199 | 3/1991  | Tashiro et al.     | 463/42    |
| 5,102,134 | 4/1992  | Smyth              | 273/143 R |
| 5,188,363 | 2/1993  | Marnell, II et al. | 463/13    |
| 5,209,479 | 5/1993  | Nagao et al.       | 273/143 R |
| 5,259,616 | 11/1993 | Bergmann           | 273/138 A |
| 5,344,144 | 9/1994  | Canote             | 273/138 A |
| 5,393,061 | 2/1995  | Manship et al.     | 463/20    |
| 5,409,225 | 4/1995  | Kelly et al.       | 273/138 R |

FOREIGN PATENT DOCUMENTS

|           |         |                |            |
|-----------|---------|----------------|------------|
| 632454    | 12/1992 | Australia      | G07F 17/32 |
| 2 086 632 | 5/1982  | United Kingdom | G07F 17/34 |
| 2 201 821 | 9/1988  | United Kingdom | G07F 17/34 |

OTHER PUBLICATIONS

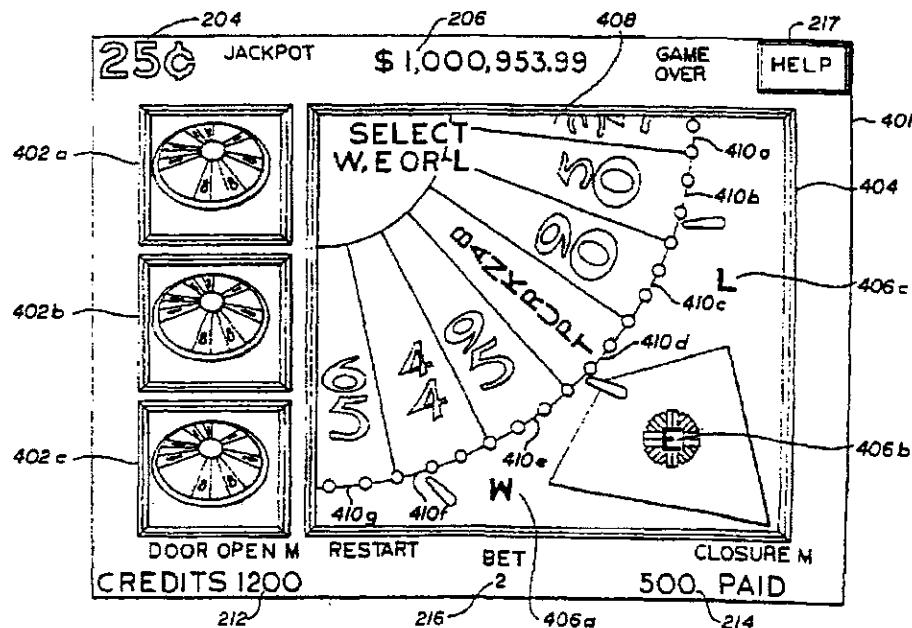
"Old ideas make new ideas". *Loose Change*, Sep. 1996, pp. 22-24.

Primary Examiner—Jessica Harrison  
Assistant Examiner—Mark A. Sager  
Attorney, Agent, or Firm—Sheridan Ross P.C.

[57] ABSTRACT

A computer implemented electronic game includes a wheel of fortune game with odds of a jackpot greatly in excess of the number of indicia on a simulated wheel. In one embodiment, a virtual mapping allows a bonus indicium of the wheel to be given a 1:M chance of being landed on, even though the bonus position is one of N positions on the simulated wheel. A random number L is chosen between 1 and M and this number is mapped to a number between 1 and N. The display of the wheel at the Lth indicium where L is mapped to L. In one embodiment, by using successive wheel spins, the odds of moving to the next round are multiplied to achieve an overall odds of winning a jackpot. In one embodiment there is a 1:50 chance of entering a bonus screen from a main slot machine/phrase completion screen, a 1:20 chance of landing on a bonus position in a first wheel spin, a 1:40 chance of landing on a bonus position for a second wheel spin and a 1:200 chance of landing on a bonus position for a last wheel spin to provide an overall odds of a jackpot of 1:8 million.

16 Claims, 7 Drawing Sheets



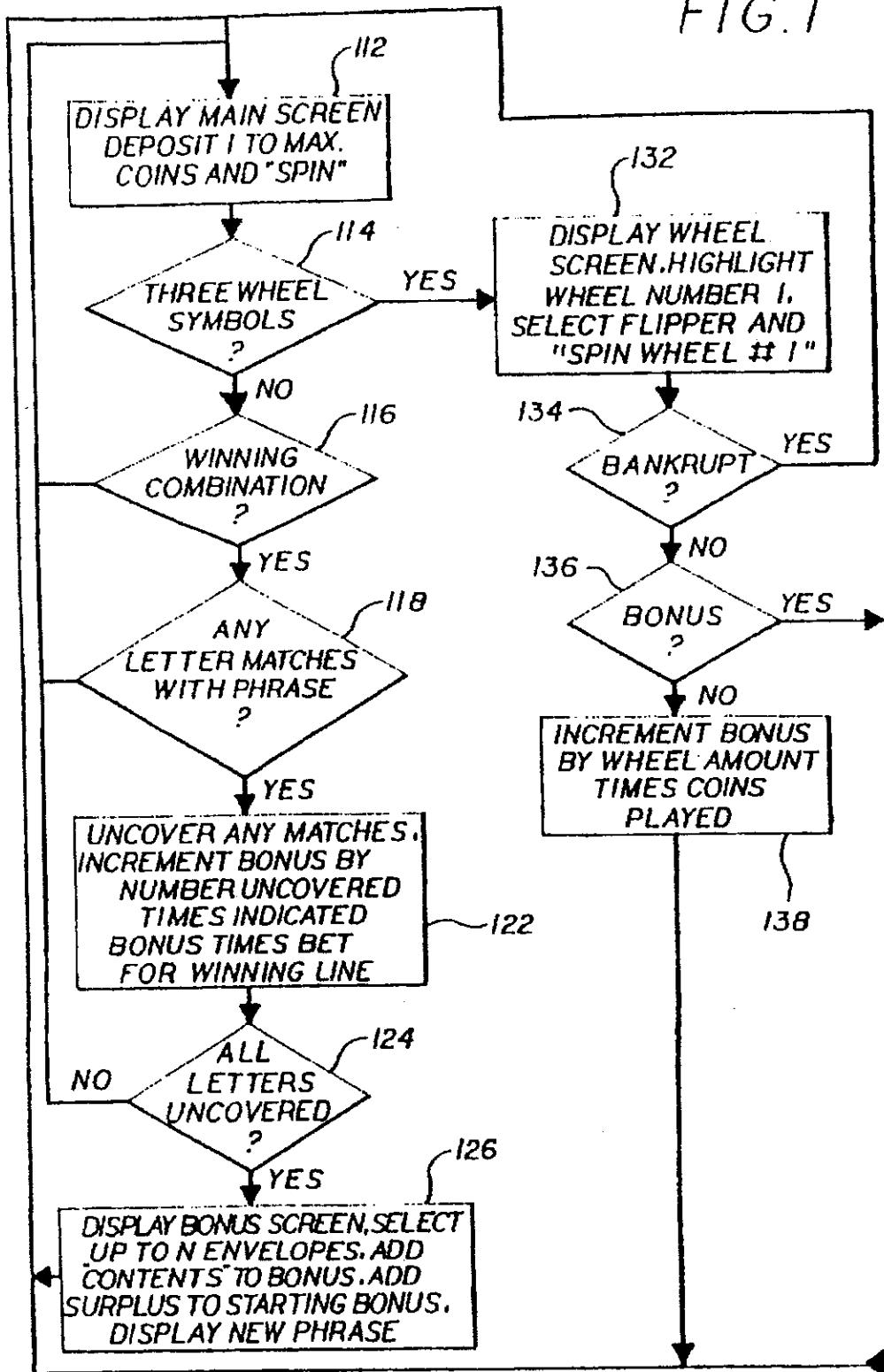
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FIG. 1



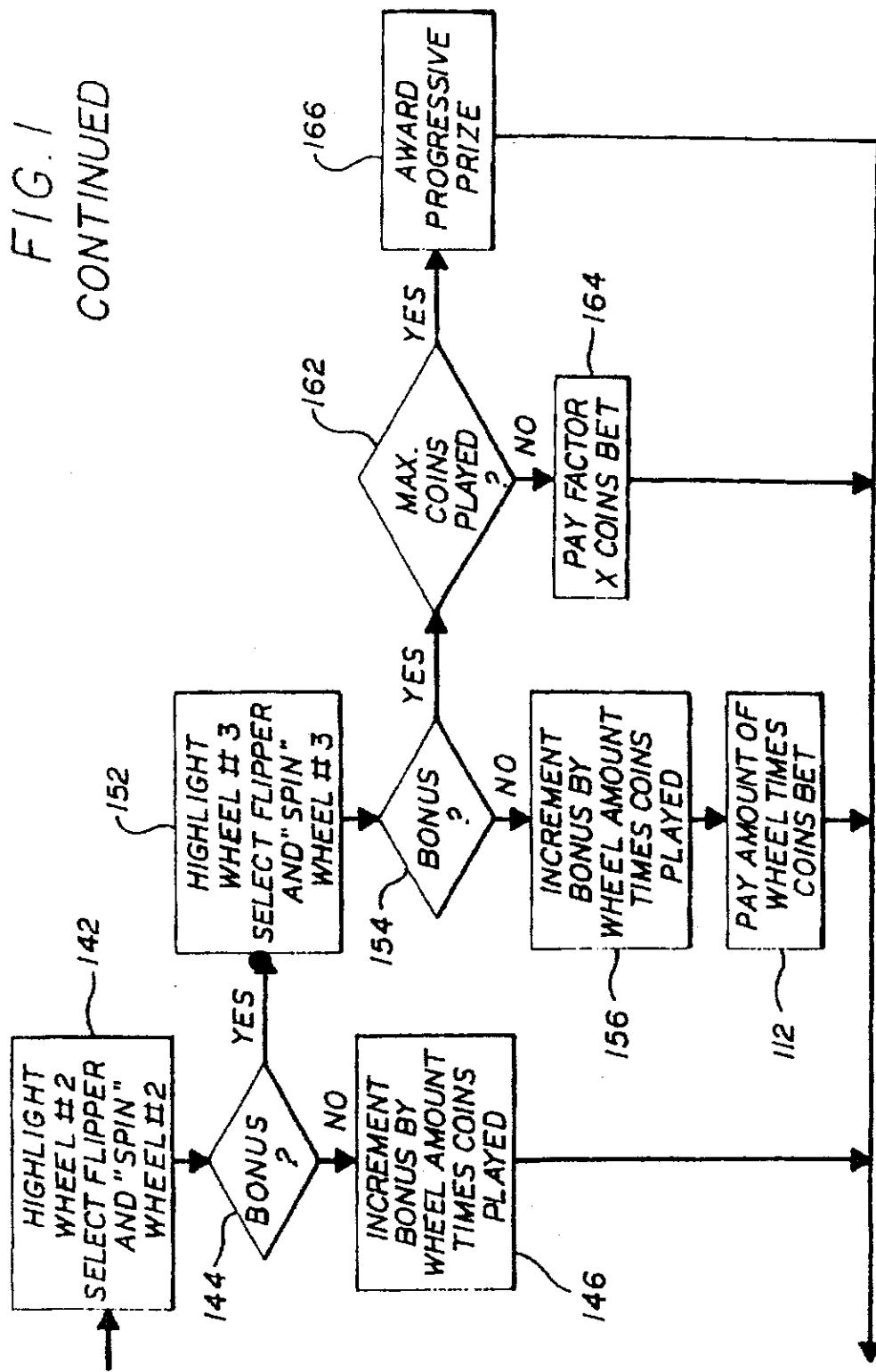
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FIG. I  
CONTINUED



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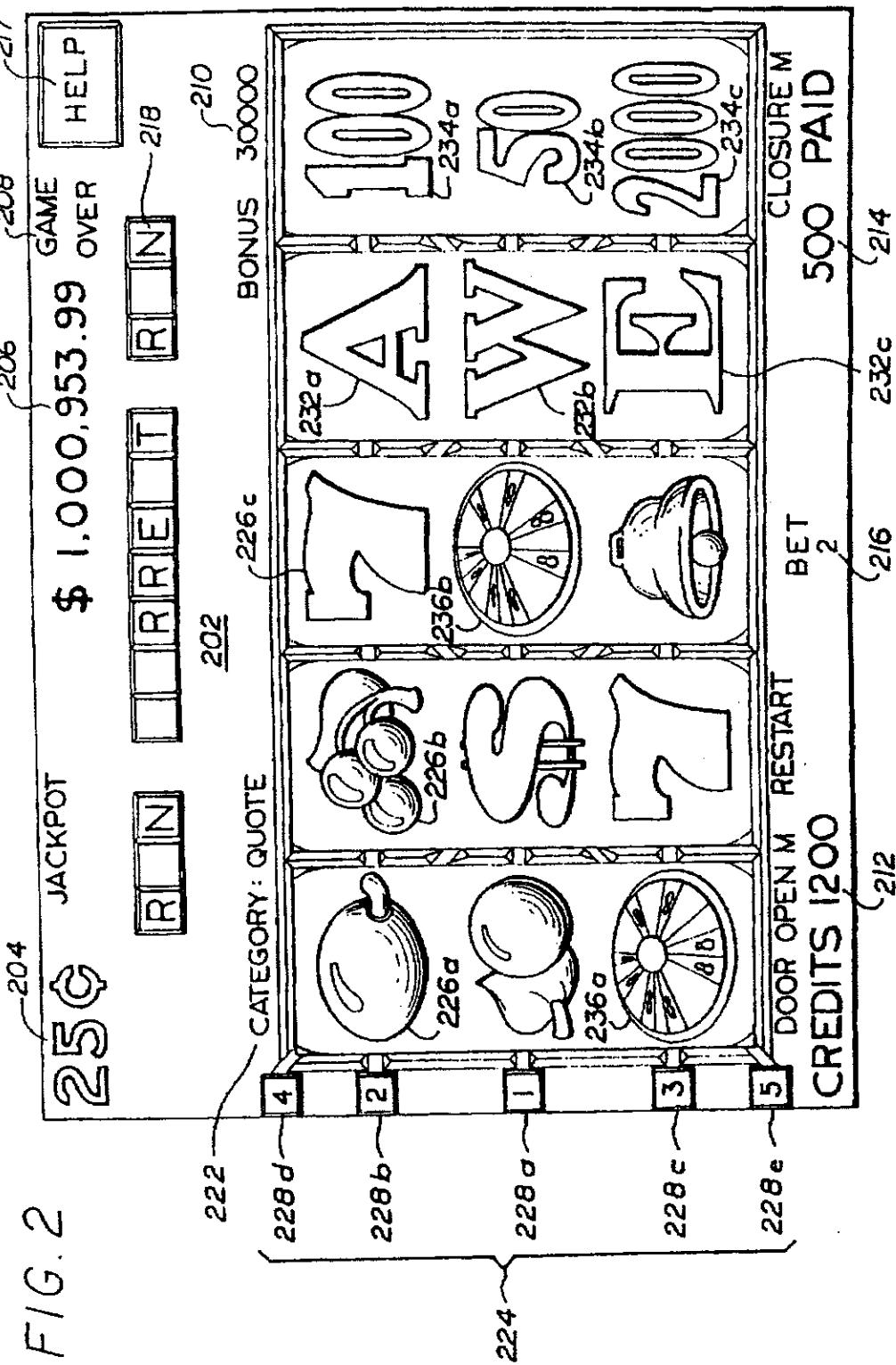


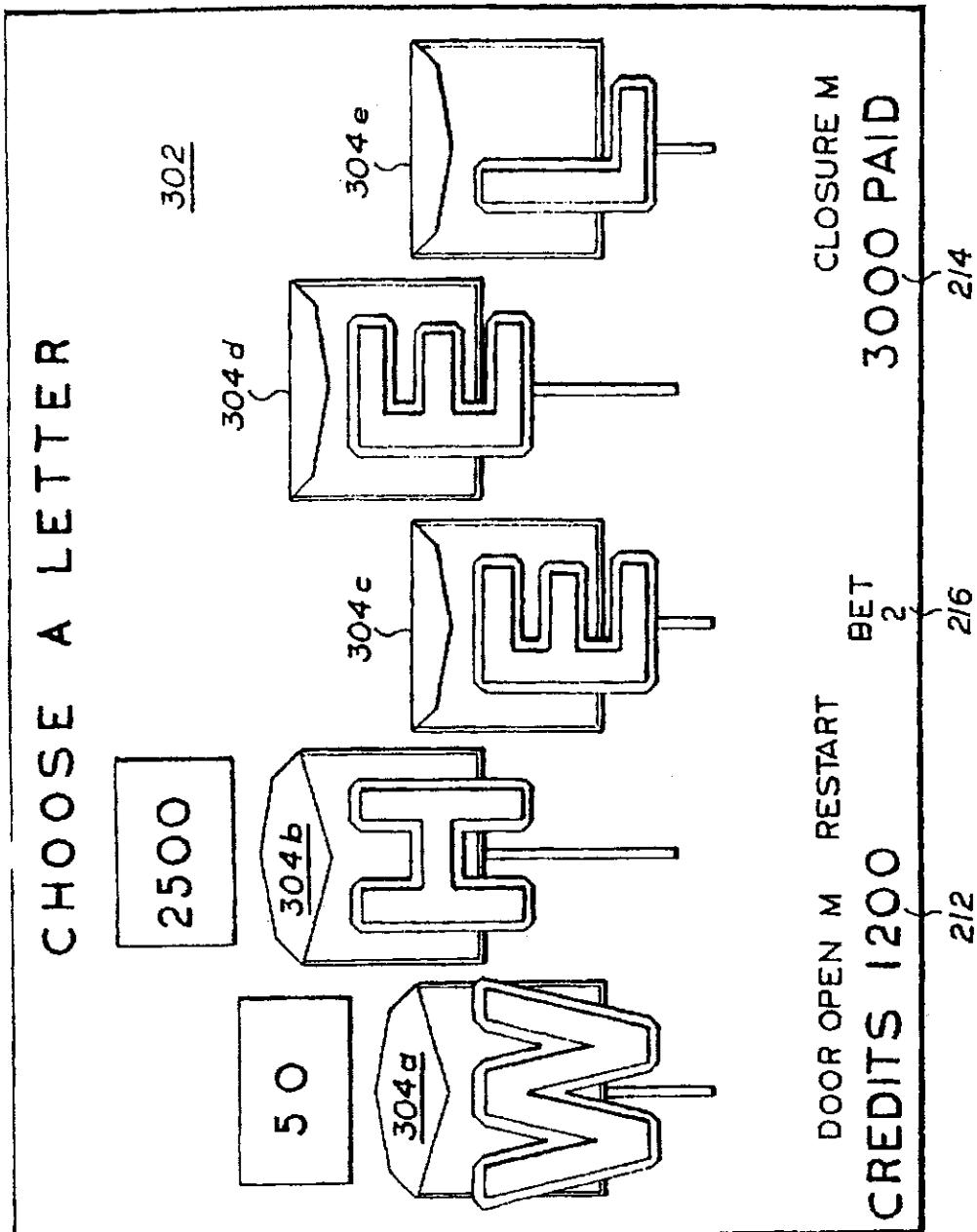
FIG. 2

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F/G. 3

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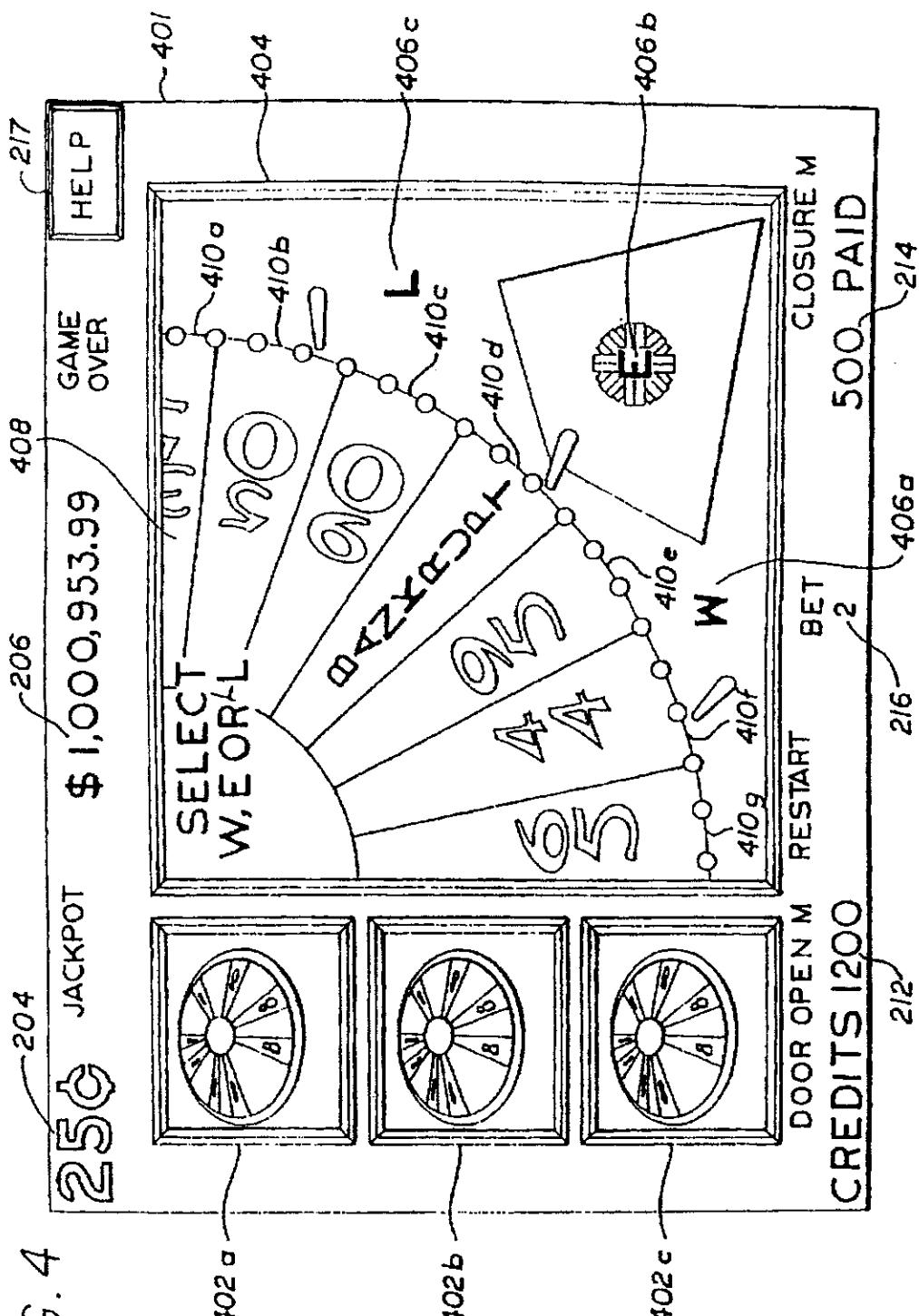


FIG. 4

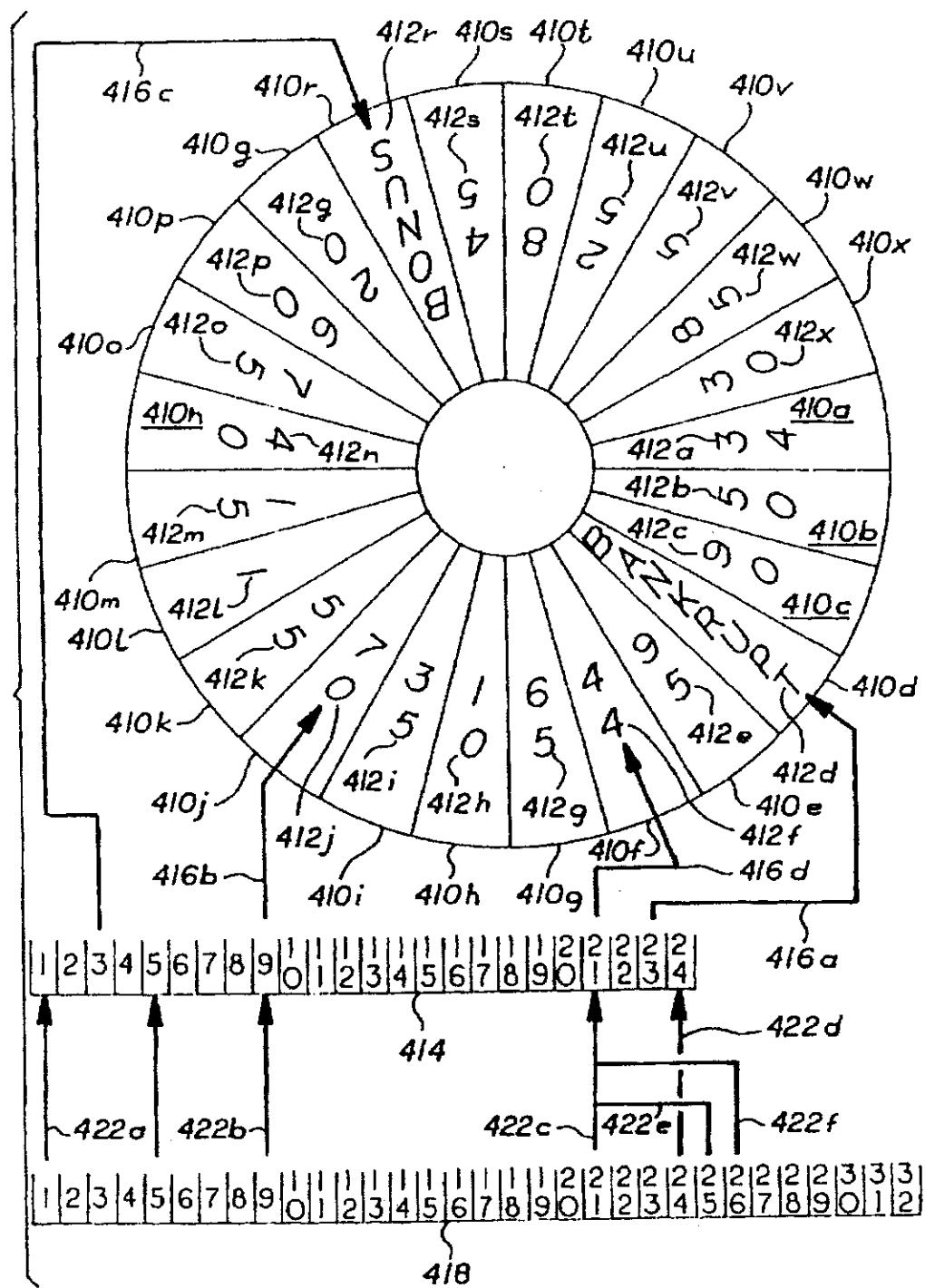
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FIG. 5



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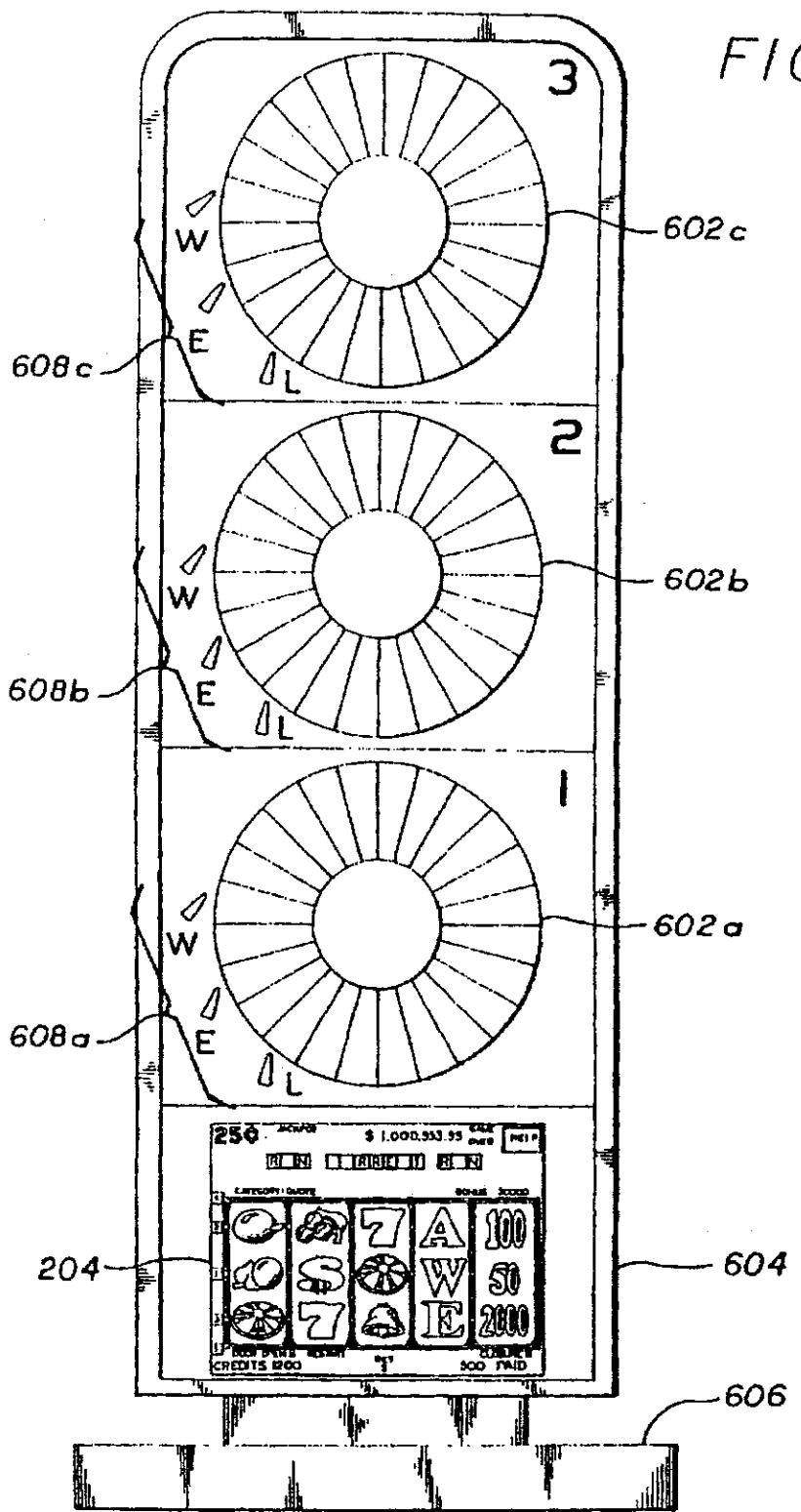


FIG. 6

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## ELECTRONIC GAME METHOD AND APPARATUS WITH HIERARCHY OF SIMULATED WHEELS

A present invention relates to an electronically implemented gaming device and in particular to a computer implemented "Wheel of Fortune" game.

### BACKGROUND INFORMATION

Among various devices which have been used for gaming, even before the electronic age, is a wheel of fortune which typically involves a disk or wheel rotatable in a vertical plane with a plurality of numbers, symbols or other indicia positioned on the face of the wheel near its perimeter. A stationary pointer, such as a flexible resilient flipper, is configured to point to an indicium when the wheel is stationary. In one use, players place wagers on which indicium the flipper will point to when the wheel comes to rest after having been manually spun.

A number of games incorporating a wheel of fortune have been devised, including a televised game titled "Wheel of Fortune" which combines a spin of a wheel of fortune with players' attempts to complete and/or guess at a hidden phrase by choosing, winning or buying letters of the alphabet which are revealed to the players if contained in the hidden phrase.

### SUMMARY OF THE INVENTION

The present invention includes a recognition of problems found in previous devices. One of the problems with a traditional wheel of fortune is that the number of possible indicia (and thus the maximum possible odds of winning) are limited by the physical size of the wheel. In some gaming environments, it is desired to provide a game which permits relatively small wagers but provides a potential for relatively large prizes. The popularity of so-called progressive games demonstrates the attractiveness of this type of gaming environment. However, the combination of small wagers and large prizes typically means that the odds of winning based on any one wager must be small, such as one in one million, more preferably one in five million, and even more preferably one in eight million or more. Previous traditional wheel of fortune games are not capable of providing these types of odds.

Accordingly, it would be advantageous to provide a game which incorporates features of a traditional wheel of fortune game but which is compatible with small prize odds such as odds of one in one million or more.

According to one embodiment of the invention, rather than providing an actual physical wheel, an electronic wheel, preferably a video image controlled by a computer, is provided. Preferably, as with the traditional physical wheel of fortune, the ending configuration of the simulated wheel, after any one spin, is a random event. However, unlike a traditional physical wheel of fortune in which the ending position is determined by physical factors such as starting position, rotational velocity, friction, and the like, randomness in the simulated wheel is provided by a computer process such as a random number generator or pseudo-random number generator. In one embodiment, the simulated wheel, just as with a traditional physical wheel, is provided with a plurality of indicia. Unlike the traditional wheel, however, in which the wheel indicia are provided with predetermined, typically even, spacing, such that odds of landing on any given indicium are determined by the total number of indicia, in one embodiment of the present

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invention, odds are determined by the number of integers in a first range of integers mapped to the indicia. The number of integers in the first range may be different from the number of indicia on the simulated wheel. For example, in an evenly spaced physical wheel with 24 indicia, the odds of landing on any one indicium would be 1 in 24. However, in the present invention, even if the simulated wheel has 24 indicia which are evenly spaced, the odds of landing on any given indicium are determined by the size of the integer range mapped to the wheel and the number of integers mapped to any given indicium on the simulated wheel and thus may be different from 1 in 24.

In another embodiment, it may be desired to change, replace or otherwise modify indicia on a simulated wheel, e.g., during the spinning of the simulated wheel. In this way, even though it may be desired to provide only N indicium locations on the simulated wheel, the simulated wheel may be provided with m possible indicia by "swapping" new indicia onto the wheel during simulated spinning.

It should be understood that it is possible to use physical wheels for implementing the game of this invention. A physical wheel would require a corresponding virtual wheel in the computer memory of the machine. The number of positions in the virtual wheel is equal to or exceeds the number of positions on the physical wheel. The virtual positions are then mapped to the physical wheel positions permitting the odds of hitting a particular physical position to change without changing the size of, or number of physical positions on the wheel. The virtual wheel is analogous to the virtual reel invention for slot machine reels disclosed in U.S. Pat. No. 4,448,419 to Telnes and assigned to International Game Technology. For purposes of this application, the use of the term simulated wheel or video screen wheel shall include physical wheels having corresponding virtual wheels in the computer memory of the device.

Traditional wheels of fortune were provided as isolated devices wherein the outcome of one wheel was unrelated to the operation of another wheel. In one embodiment of the present invention, a wheel which provides the potential for winning a large or jackpot prize can only provide such a win if the player has previously achieved a predefined result on a previous spin of another wheel. In one embodiment, the previous wheel need not provide an opportunity for a jackpot win. In this situation, the odds of winning a grand prize or jackpot on the second wheel spin is the product of the odds of landing on a jackpot-indicating indicium on said second simulated wheel times the odds of obtaining the predefined result on the previous wheel, providing a hierarchy of wheels of fortune wherein the result from one wheel spin has an effect on the other wheel spin. Thus, in one embodiment, a game provides for two or more different wheel spins in order to win a grand prize, providing odds of winning the grand prize which is a product of odds on two or more different spins and thus diminishing the overall odds.

### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a flow chart describing a procedure for a wheel of fortune simulated game according to an embodiment of the present invention;

FIG. 2 shows a display screen during the first portion of game play according to an embodiment of the present invention;

FIG. 3 shows the appearance of a display screen during a second portion of game play according to an embodiment of the present invention;

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FIG. 4 shows the appearance of a display screen during a third portion of game play according to an embodiment of the present invention;

FIG. 5 is a schematic diagram showing an example of integer-to-wheel mapping according to one embodiment of the present invention; and

FIG. 6 shows the appearance of a device in an embodiment of the invention using physical wheels with associated virtual wheels.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention involves an electronically-implemented game method and apparatus, preferably a computer-implemented game. It is anticipated that a game according to the present invention will be played in a context in which monetary wagering is involved, typically in a casino or similarly regulated environment. As will be clear to those of skill in the art, the game can also be played in other environments such as personal computer (PC) game playing, video arcade environments, networked or other remote environments including Internet environments, local area networks, wide area networks and the like, and can involve either monetary wagering, wagering using physical or electronic tokens, credits and the like, or play without wagering such as for amusement purposes.

In one embodiment, the game is implemented on an electronic gaming terminal which includes a programmable controller or computer. The computer may be coupled to various output devices preferably including a display screen for displaying aspects of the game as described more thoroughly below. Other output devices may include audio outputs such as speakers, bells, whistles and the like, and signaling devices such as controllable lights and the like. A number of types of input devices can be used by which the user can place wagers and/or play the game, including touch screen input devices, joysticks, mouse input devices, keyboards, buttons, levers and the like, as well as coin or currency acceptors and/or validators, card readers such as credit card readers, or other encoded-card readers. In one embodiment, gaming terminals may be provided with communication devices, e.g., for purposes for accounting, maintenance, management, security, controls, updating and the like. It is common in the gaming industry to provide for electronic gaming terminals and those with skill in the art will understand how to construct and program such gaming terminals to implement the game according to the present invention after reading and understanding the present description.

In one embodiment, as depicted in FIG. 1, game play begins when the gaming terminal is configured to display a main screen 202 (FIG. 2). The main screen may be provided with a number of displays such as a display of the denomination of the machine (i.e., the smallest coin that can be used to play a game on the gaming terminal) 204, the size of the grand prize or jackpot 206, an indication of the current status of the game 208, an indication of the number of bonus points (described below) 210, an indication of the user's current credits 212, the amount paid 214, and an indication of the current or most recent bet, such as the number of coins wagered 216. In one embodiment, bonus points do not have any monetary value but affect play of the game as described below. In one embodiment, a user may activate an input device, such as a first touch screen region 217 to obtain instructions on playing the game or other help.

In the depicted embodiment, the first portion of the game is not a simulated wheel spin game. A number of other types

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of games can be used for the first portion. In the depicted embodiment, the first portion game is a combination electronic slot machine and puzzle completion game. In this case, the puzzle is a word phrase; however, it could be a picture puzzle or any other type of piece by piece puzzle to be solved. A first area 218 displays regions for each letter in the phrase. In the embodiment which is depicted in FIG. 2, some of the letters are revealed (namely, all of the Rs, Ns, Es and Ts) as a result of previous play (as described below) or possibly as an automatic starting point. In the depicted embodiment, the category of the phrase is displayed 222.

A second portion of the screen 224 shows an area having some similarities to a typical electronic slot machine display, including simulated slot machine reels 226a, 226b, 226c and pay line indicators 228a, 228b, 228c, 228d, 228e. Each simulated reel region displays various indicia, such as the types of fruit, bell, bar and number symbols commonly found in electronic slot machines. In addition, indicia may be provided for use in determining whether the user may have a chance at a secondary screen video wheel spin, such as wheel indicia 236a, 236b. Associated with each payline 228 is one of a plurality of letter indicia 232a, 232b, 232c, with a bonus value being associated with each of the letter indicia 234a, 234b, 234c. A user, during display of the main screen 202, may make a wager, e.g., by depositing a coin, currency, credit card, etc. In one embodiment, a minimum number of coins or other monetary units must be deposited in order to play the game as described below. In one embodiment, the user may wager up to a maximum number of coins at a time (MAX). In one embodiment, the player may deposit between 1 and 25 coins. After the user has deposited the maximum number or has indicated (e.g., by a button or touch screen input) that the user has completed making the desired wager, the slot machine portion of the screen 224 will display a simulated slot machine handle pull, i.e., the simulated reels 226a, 226b, 226c (along with reels 226d, 226e) will appear to spin 112.

After showing a simulated slot machine reel spin, the display 202 will simulate the appearance of slot machine reels that have come to rest, preferably in randomly chosen positions. If, following the reel spin, the results of the slot machine region 224 show at least a predetermined number, such as 3, of wheel indicia 236a, 236b, the user will be provided with a chance to play a wheel of fortune portion of the game as described more thoroughly below.

If the slot machine portion 224 shows a winning combination, such as three bells aligned along one of the pay lines 228 (or other combinations defined as winning combinations 116), the computer will determine 118 whether any of the letters 232 associated with such winning pay lines match any un-covered letters from the phrase 218. If there are any matches between such letters 232 and the phrase 218, all instances of that letter in the phrase are revealed in region 218. The bonus value 210 is incremented 122 by a number equal to the product of the bonus points 234 associated with that letter 232 times the number of occurrences of that letter 232 in the phrase 218 times the number of coins bet 216 on the particular pay line. In some embodiments, the user may be permitted to place bets 216 associated with different pay lines and in that case the product will be calculated on the basis of the wagers associated with the particular winning pay lines. If, as a result of the most recent slot machine spin, there are still uncovered letters remaining in the phrase 218, the process returns to the beginning of the procedure 112 and the user has an opportunity to place another wager and spin the slot machines wheels.

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If all of the letters in the phrase 218 have been uncovered, the display screen is controlled to display a bonus screen 302. The bonus screen 302 permits the user to select from among various regions of the screen, each associated with a point value. In one embodiment, the regions are depicted as envelopes 304a-304e, and the user is permitted to select (e.g., via a touch screen or other input device) a certain number of envelopes or regions with the points associated with these envelopes or regions being added to the user's credit value 212. In one embodiment, the number of envelopes or regions which the user can select depends upon how many points 210 the user had accumulated before reaching the bonus screen 302. In one embodiment, the user may select one letter if fewer than 2000 points have been accumulated, two letters for 2000 to 2999 points, three letters for 3000 to 3499 points, 4 letters for 3500 to 3599 points, and five letters for 3600 or more points. These point values may be altered and are set in accordance with the game design as determined by the game designer. Since the phrase 218 has been solved, the procedure returns to the beginning 112 so that the user can, if desired, begin a new game, with a new phrase 218. If the player, during the bonus screen 302, had more points than the minimum number of points needed for the envelopes that were selected, the excess points are used as a starting bonus value 210 for the next game or phrase 218. For example, if the player accumulated 2500 bonus points during the main game (FIG. 2), the player needed only 2000 points as the minimum necessary to select two envelopes. Thus, 500 points will be used as the starting bonus points towards the next phrase 210.

As noted above, preferably one or more results from the first, non-wheel game (FIG. 2) can be used as a "trigger" to permit the user to play a wheel game. In one embodiment, a predetermined number of special wheel symbols 236 must be displayed on the simulated slot machine region 224 in order to have a chance at the wheel game. Preferably the non-wheel game (whether it is a slot machine/phrase game as depicted, or some other game such as poker, other card games, keno, other traditional casino games or a common amusement game), provides a bounded or predetermined probability of having a chance at the wheel game as described below. In one embodiment, the non-wheel game FIG. 2 is configured so that there is a 1:50 chance of reaching the point where a wheel game may be played.

If the user obtains the result 114 which permits the user to play a wheel game, the wheel screen FIG. 4 will be shown on the display device. In one embodiment, the user may be provided with an opportunity to spin two or more simulated wheels, preferably in a hierarchical fashion, i.e., such that at least a first predetermined result must be achieved on a first wheel in order for the user to be permitted to obtain a simulated spin of the next wheel. In the embodiment of FIG. 4, first, second and third wheel indicia 402a, 402b, 402c can be highlighted or otherwise distinguished to show the user which wheel in the hierarchy is currently being played or spun. In the depicted embodiment, a second portion of the screen 404 shows at least a portion of the simulated wheel which is indicated by the indicia 402, preferably in a magnified view as shown. In one embodiment, there are a plurality of flippers or pointers such as three flippers associated with letters or other indicia 406a, 406b, 406c. In this embodiment, the user is permitted to select (via an input device such as a touch screen) which of the flippers or pointers will be the pointer used to indicate the stop position indicium of the wheel.

In the depicted embodiment the simulated wheel 408 is divided into a plurality of regions, preferably 24 evenly

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spaced regions. In the embodiment of FIG. 4, only 7 of the 24 regions are shown in the enlarged view at any one time.

Although the wheel 401a depicted on the screen 401 is a simulated wheel rather than a physical wheel, the simulated wheel 408 has certain characteristics in common with a real physical wheel of fortune. The major similarities of importance are that a plurality of indicia are associated with the wheel, the stop indicium of the wheel is randomly or pseudo randomly determined and for each indicium there is a bounded or predetermined probability that that indicium will be pointed to by the selected flipper or other indicator when the simulated wheel spin is completed. Preferably the probabilities for each of the indicia can be established independently of the number of or position of the indicia on the simulated wheel.

FIG. 5 illustrates one fashion in which this independence can be achieved. As depicted in FIG. 5, in one embodiment a simulated wheel defines 24 regions 410a-410x, each associated with an indicium 412a-412x. In one embodiment, each of the 24 indicia 412a-412x is associated with an integer 414 in the range 1-24. In the embodiment depicted in FIG. 5, associations between the integers 414 in the range of 1-24 and the indicia 412 are shown by arrows 416a-416d. Although 24 arrows would be used to show all 25 of the associations, only four arrows are depicted in FIG. 5 for clarity. The set of all such defined associations form a first mapping. Manners of defining and storing associations or mappings are well known to those of skill in the art. In one embodiment, the mapping is stored in memory as an ordered list with 24 entries, each entry identifying one of the simulated wheel spaces 410. In this embodiment a wheel spin is performed by selecting one of the numbers 414 in the range 1-24 preferably as described below, controlling the display 401 to simulate the appearance of the wheel 408 as it would appear if it were spinning and simulating the slowing down and stopping of the wheel so that the selected flipper 406 points to a region 410 bearing the indicium 412 which corresponds with the selected one of the integers 414.

If it were desired to provide the game in which the odds of landing on any one of the 24 indicia was exactly 1:24, then it would be possible to achieve such odds by randomly selecting one of the integers 414. In one embodiment, however, it is desired to have odds which are different from, preferably larger than, 1:N where N is the number of indicia shown on the simulated wheel at any one time. One manner of achieving such a result is to define a second set of integers 418 in the range 1-M where M may be different from N such as integers 1-32. Each of the second set of integers 418 is associated with or mapped onto an integer in the first group of integers 414, as shown by arrows 422a-422f. Although 32 arrows would be needed to show the full mapping or association, only six arrows are shown for purposes of clarity. Because N, the number integers in the first group 414, is smaller than M, the number of integers in the second group 418, it will be necessary for at least one of the integers in the first group 414 to be associated with more than one of the integers in the second group 418. The mapping or association can be done in any of a number of fashions as long as for every integer in the second group 418 there is an associated integer in the first group 414 which is associated with an indicium of the wheel 412. For example, the depicted embodiment integer 21 in the first group 414 is associated with 422c, 422e, 422f, three integers (21, 25, 26) from the second group 418. In this configuration, the computer can be programmed to randomly select an integer between 1 and 32 which is mapped onto one of the indicia 412g via the mapping 422 onto the integers 1-24. Several

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features should be noted in this regard. For an indicium 412 which is associated with a member of the first group 414 that is associated with only a single integer from the second group 418, the odds of landing on that indicium on any one spin will be 1:M. For an indicium such as 412f which is associated with an integer (e.g., integer 21) in the second group 414 that is associated (422c, 422e, 422f) with three integers (21, 25, 26) of the second group 418, the odds of landing on that indicium 412f will be 1:3M.

If wheel 408 is a simulated rather than a physical wheel, it is possible to modify or replace the indicium 412 associated with a region 410 merely by appropriate programming instructions. Thus, even when it is desired to have no more than a maximum number (such as 24) of regions 410 on the simulated wheel (e.g., to provide for sufficient size and clarity of the indicia on the screen) it is possible for the simulated wheel to display more than 24 indicia, not all at the same time. For example, in the embodiment depicted in FIGS. 4 and 5, region 410g is associated with the indicium "65" 412g. In one embodiment, in the display screen (FIG. 4) is controlled to simulate clockwise spinning of the wheel 408. After the view depicted in FIG. 4, the region 410g will move out of view as region 410a (and then 410x) moves into view. After region 410g has moved out of view, indicium 412g could be replaced by a new, 25th indicium which would be shown on the screen when region 410g reappears on the enlarged view 404 during the next revolution of the wheel 408. Thus it is possible in the present embodiment to provide for a number of indicia 412 on the wheel which is greater than the number of regions 410 defined for displaying the indicia at any one time.

It should be noted that although the use of simulated video wheels is preferred, it is possible to implement the invention using at least one physical wheel having one or more associated virtual wheels. Video wheels are preferred because of the ease with which they can be altered. In addition, they can be implemented less expensively since no extra hardware is required. However, physical wheels such as those shown in FIG. 6 could be incorporated into a machine to provide a similar level of excitement to the video wheels. As shown in FIG. 6, the same main screen 204 is used. Instead of having extra screens displaying video wheels 402, a set of physical wheels 602a-c is affixed to the top of cabinet 604 containing main screen 204. Cabinet 604 is set atop base 606. The play of the embodiment incorporating physical wheels 602 is the same as described above with respect to the video wheels, with the only difference being that instead of bonus screens being displayed with the video wheels, play on the physical wheels is substituted when the required events occur. For example, when the user obtains the result 114, the wheel game is activated. The user is then entitled to a wheel spin on first wheel 602a. If a predetermined result is achieved on first wheel 602a upon completion of the spin, the user is entitled to a spin on second wheel 602b. Finally, if a predetermined result is achieved upon the completion of the spin of second wheel 602b, the user is entitled to a spin on third wheel 602c. Flippers 608a-c for each wheel, similar to those depicted on the simulated video wheels, are positioned on the physical wheels 602a-c to determine the selected position after the spin is completed.

In an embodiment in accordance with FIG. 6, it is also possible to replace main screen 204 with physical spinning reels as used in standard slot machines. An example of a standard slot is one that is manufactured by International Game Technology of Reno, Nev.

Returning to FIG. 1, when the user reaches the wheel game depicted in FIG. 4, the large view of the wheel is

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displayed 404 the indicium 402a corresponding to the wheel which is being spun, wheel number 1, is highlighted, the user selects one of the flippers 406a, 406b, 406c and a simulated wheel spin is displayed. The wheel stops so that the selected flipper 406 points to a randomly or pseudo-randomly selected indicium (selected as described above) 132. Preferably, one of the indicia 412d is a "bankrupt" or other losing indicium and if the selected flipper 406b points to this indicium, play returns to the beginning of the game 112.

If it is determined that the indicium pointed at by the selected flipper 406 is not a losing indicium, it is next determined whether the selected flipper 406 points to a bonus indicium 412. Although in the embodiment in FIG. 5, only a single bankrupt indicium and a single bonus indicium is depicted, a wheel may be provided with more or fewer bankrupt and/or bonus indicia.

Preferably, indicia which are not "bankrupt" or "bonus" are associated with a numerical value 412a, 412b, 412c, 412e-412q, 412s-412x. If the wheel lands on neither the bonus nor bankrupt indicium, the credit value 212 is preferably incremented by the amount associated with the indicium 412 times the number of coins played 216 and the procedure then returns to the beginning 112.

If the wheel landed on a bonus indicium 136, the second wheel indicium 402b is highlighted and the player is provided with a spin of the second wheel. In one embodiment, the second wheel is similar to the first wheel but preferably does not contain a bankrupt indicium 412d and preferably contains indicium values 412 which are larger than (such as twice) the amount of the first wheel values. Thus, after reaching the second wheel spin, the second wheel indicium 412b is highlighted, user selects a flipper 406 and the simulated wheel spin is displayed 142. If the wheel does not land on a bonus indicium 412r, the credit value 212 is incremented 146 by the amount of the bonus indicium on the second wheel times the number of coins bet 216 and play then returns to the beginning 112.

If the second wheel resulted in a bonus indicium 412r, the wheel number three indicator 402c is highlighted, the user selects a flipper 406 and simulated spin at the third wheel is displayed. Preferably the third wheel has no bankrupt indicium 412d and the values associated with the indicia 412 are larger (such as 10 times) those on the first wheel. If the player does not land on the bonus indicium 412r of the third wheel, the credit value 212 is incremented by the wheel amount times the number of coins played 216 and the player receives a payout equal to the amount of the indicium 412 pointed to by the selected flipper 406 times the number of coins bet 216. If the player lands on a bonus indicium 412r on the third wheel spin it is determined 162 whether the player had bet the maximum number of coins (MAX) 216. If not, the player is paid some multiple of the number of coins bet 216, such as 10,000 times the number of coins bet 164. If the player has bet the maximum number of coins 216 the player is awarded a top award jackpot prize 206 166. In either case, player then returns to the beginning 112.

The game may be set up as a stand alone machine capable of paying out set prize values for winning combinations on pay lines 228a-e for reels 226a-e, or a particular selected wheel portion 410 during respective portions of the game process. The top award jackpot prize may also be a set value that is more than any other prize. However, in a preferred embodiment of the invention, the top award jackpot prize is a progressive value that increases as a function of each coin deposited in the machine. Such a value 206 is shown on

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main display screen 204. The progressive machine may be operated as a stand alone unit, or preferably in a linked manner to other similar games throughout a particular gaming jurisdiction. For example, if 1000 machines are linked together such that a portion of each coin deposited in each machine increases the top award jackpot prize amount as a function of the coin in for each machine, the top prize is capable of reaching figures in the millions of dollars. Linked progressive systems of this type are known in the gaming industry such as International Game Technology's Megabucks® that has reached top award jackpot prizes of more than \$10 million.

In one embodiment, a first game portion provides a 1:50 chance of having an opportunity to spin a first wheel, the first wheel provides a 1:20 chance of having an opportunity at a second wheel, a second wheel provides a 1:40 chance of having an opportunity at a third wheel, and a third wheel provides a 1:200 chance of winning a jackpot to achieve overall odds (i.e., the product of the odds for all game portions) of 1:8,000,000 to win the jackpot in game having three wheel spins. 1:8,000,000 is obtained by multiplying the combined odds, i.e.  $50 \times 20 \times 40 \times 200 = 8,000,000$ . The overall odds for the jackpot can be adjusted in a number of ways, e.g., by changing the number of wheel spins involved in winning the jackpot, and/or by changing the odds of any particular wheel spin giving an opportunity at the next wheel in the hierarchy (such as by adjusting the mapping from the range of integers to the simulated wheel indicia).

In light of the above description, a number of advantages of the present invention can be seen. The present invention provides a game which includes aspects of the familiar Wheel of Fortune game which is attractive to many players but which overcome some of the limitations of a traditional wheel of fortune game. The present invention achieves 1:K odds of landing on a jackpot-winning indicium of the simulated wheel where K is greater than the total number of indicia on the wheel. K is preferably a large number such as 1,000,000 preferably 5,000,000 and more preferably 8,000,000 or more. In one embodiment a mapping between groups of integers is provided such that the odds of landing on any one indicium are different from 1:J where J is the number of indicia (preferably evenly spaced indicia) on the simulated wheel. In one embodiment, odds of winning a grand prize or jackpot are adjusted by providing a game in which spins of several different wheels are provided and wherein the wheels are hierarchically related such that the results of a spin of one wheel affect the either ability to spin or the results from a spin of a succeeding wheel.

A number of variations and modifications can also be used. Although the present disclosure describes an embodiment having three wheel spins in a hierarchy, it is also possible to provide more or fewer wheel spins in a multiple wheel hierarchy. Although in the described embodiment, each wheel in the hierarchy is different (such as having different values associated with the indicia and/or different odds of landing on a bonus indicium) an embodiment could be provided in which all wheels provide identical values, indicia and/or odds or different virtual wheels can be assigned to the same simulated or physical wheel depending on the level of the hierarchy a player attains. In addition, although the above described embodiment provides for a first slot machine/pharse completion game combined with the wheel game, it is possible to combine a wheel game with other types of games such as a keno game, a blackjack game, a poker game and the like, or to provide a game which is strictly a hierarchy of wheels or a single wheel, without combining with a game of another type. Further, it is

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possible to implement the invention in other ways by displaying ranges of indicia without the use of a wheel. For example, a line of values could be displayed and an indicator arrow could move along the line. The movement could be back and forth along the line or with the use of a wrap-around effect upon reaching the end of the line.

Although the invention has been described by way of a preferred embodiment and certain variations of modifications, other variations and modifications can also be used, if the invention being defined by the following the claims:

What is claimed is:

1. A game process, implemented using a computer, comprising:  
receiving a monetary wager from a player;  
controlling a first display device to display an image of at least a portion of a first simulated value range, said image, during at least a first period of said display, containing a first plurality of indicia including at least one indicium designated as a next level indicium, at least some of said plurality of indicia, upon being displayed, indicating loss of at least part of said monetary wager; and  
upon the next level indicium being selected on the first simulated value range during the first period, controlling a display to show at least a portion of a wheel of fortune rotatable about a first axis, said wheel having a plurality of prize indicators on a face thereof and situated adjacent at least a first pointer for indicating exactly one of said prize indicators after rotation about said first axis has stopped, all of said prize indicators indicating the size of the prize won by said player as a result of said next level indicium wherein no loss of a part of said monetary wager results from any of said prize indicators, said plurality of prize indicators including at least one top award indicium.
2. A method as claimed in claim 1 wherein said first simulated value range does not contain a top award indicium.
3. A method as claimed in claim 1 wherein the overall odds that said indicator points to said top award indicium is at least 1:1,000,000.
4. A method as claimed in claim 1 wherein said first simulated value range contains J indicia where J is an integer, further comprising:  
storing, in said computer, information defining a mapping between integers 1 through J, corresponding, respectively to said J indicia, and integers 1 through M where M is an integer greater than or equal to J;  
randomly selecting a first integer between 1 and M designated as x; and  
controlling said display device to simulate selection of an indicia in said first simulated value range wherein x is mapped to at least one position that corresponds to a display position y between the range 1 and J; and  
displaying an indicium located at said display position y on the first display device.
5. The method of claim 1 wherein the top award represented by the top award indicium progresses as a function of coin in deposited.
6. The method of claim 5 wherein the top award represented by the top award indicium progresses as a function of coin in deposited from a plurality of devices on which the method is being conducted.
7. A process as claimed in claim 1 wherein said wheel of fortune comprises a physical wheel.

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8. A process as claimed in claim 1 wherein said wheel of fortune comprises a display on a video display screen.

9. A process as claimed in claim 1 wherein said wheel of fortune is controlled so as to stop at a position which is random, independent of the skill of the player.

10. A process as claimed in claim 1 wherein said wheel of fortune is computer controlled so as to stop at a position randomly selected by said computer.

11. A process as claimed in claim 1 wherein, when N represents the number of stop positions of said wheel of fortune, said wheel of fortune is computer controlled so that the odds of stopping at a particular stop position are different from  $1/N$ .

12. A process as claimed in claim 1 wherein said game process includes the award of at least one progressive prize.

13. A process as claimed in claim 12, wherein said progressive prize is awarded in response to a predefined stop position of said wheel of fortune.

14. Apparatus under computer control, comprising:

a first gaming apparatus which includes  
a first display device for displaying a game of chance;  
a first value wheel activated for a first time period upon  
a random event occurring in the game of chance, the  
first value wheel including at least one next level  
indictum; and  
a second value wheel activated for a second time period  
upon the next level indictum being selected upon  
completion of the first time period, the second value  
wheel including at least one top award indictum.

15. The apparatus of claim 14 further comprising:

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at least one second gaming apparatus; and  
a system for linking the at least one second gaming  
apparatus with said first gaming apparatus such that a  
top award jackpot prize represented by the top award  
indictum progresses as a function of coin in deposited  
into said first gaming apparatus and the at least one  
second gaming apparatus linked together in the system.

16. A gaming apparatus under computer control, comprising:

means for receiving a monetary wager from a player;  
a first display device for displaying a game of chance  
which includes the potential for losing at least a portion  
of said monetary wager;  
a wheel of fortune activated for a first time period upon a  
random event occurring in the game of chance, the  
wheel of fortune rotatable about a first axis, wherein  
said wheel of fortune is controlled so as to stop at a  
random stop position, independent of the skill of the  
player, said wheel of fortune having a plurality of prize  
indicators on a face thereof and situated adjacent at  
least a first pointer for indicating exactly one of said  
prize indicators after rotation about said first axis has  
stopped, all of said prize indicators indicating the size  
of the prize won by said player as a result of said  
random even wherein no loss of a part of said monetary  
wager results from any of said prize indicators.

\* \* \* \* \*

UNITED STATES PATENT AND TRADEMARK OFFICE  
Certificate

Patent No. 5,788,573

Patented: August 5, 1998

On petition requesting issuance of a certificate for correction of inventorship pursuant to 35 U.S.C. 256, it has been found that the above identified patent, through error and without any deceptive intent, improperly sets forth the inventorship.

Accordingly, it is hereby certified that the correct inventorship of this patent is: Anthony J. Baerlocher, Carson City, Nevada; Robert W. Crowder, Reno, Nevada; and Yin Zin Mark Lam, Reno, Nevada.

Signed and Sealed this Seventeenth Day of December 2002.

S. THOMAS HUGHES  
*Supervisory Patent Examiner*  
Art Unit 3714

**EXHIBIT O**

US005722891A

**United States Patent [19]**

Inoue

[11] Patent Number: **5,722,891**  
 [45] Date of Patent: **Mar. 3, 1998**

[54] SLOT MACHINE HAVING TWO DISTINCT  
SETS OF REELS

60-227787 11/1985 Japan.  
 62-253091 11/1987 Japan.  
 1-130384 9/1989 Japan.  
 3-136683 6/1991 Japan.  
 5237217 9/1993 Japan.  
 7275432 10/1995 Japan.  
 7313661 12/1995 Japan.  
 2097160 10/1982 United Kingdom ..... 273/138 A  
 2153572 7/1985 United Kingdom ..... 273/143 R  
 2170636 8/1986 United Kingdom ..... 273/143 R  
 2226907 7/1990 United Kingdom ..... 273/143 R

[75] Inventor: Haruo Inoue, Tokyo, Japan

[73] Assignee: Eagle Co., Ltd., Tokyo, Japan

[21] Appl. No.: 399,922

[22] Filed: Mar. 7, 1995

[30] Foreign Application Priority Data

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[51] Int. Cl. <sup>6</sup> ..... A63F 9/22

[52] U.S. Cl. ..... 463/20; 273/143 R

[58] Field of Search ..... 463/20, 21, 25;  
273/143 R, 138 A; 364/412, 410

[56] References Cited

U.S. PATENT DOCUMENTS

|           |         |               |       |          |
|-----------|---------|---------------|-------|----------|
| 4,624,459 | 11/1986 | Kaufman       | ..... | 463/20   |
| 5,067,712 | 11/1991 | Georgiou      | ..... | 463/21   |
| 5,152,529 | 10/1992 | Okada         | ..... | 463/20   |
| 5,380,008 | 1/1995  | Mathis et al. | ..... | 463/20 X |
| 5,395,111 | 3/1995  | Inoue         | ..... | 463/20 X |

FOREIGN PATENT DOCUMENTS

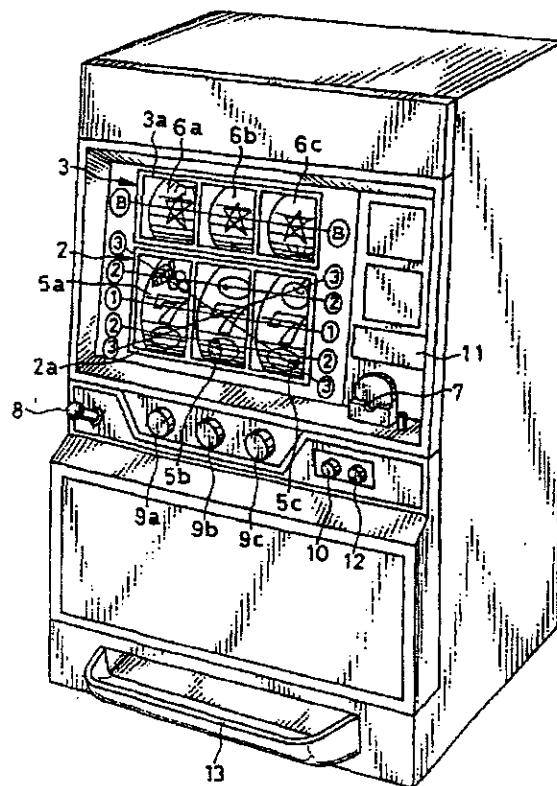
59-193487 12/1984 Japan.

Primary Examiner—Jessica Harrison  
 Assistant Examiner—Michael O'Neill  
 Attorney, Agent, or Firm—Young & Thompson

[57] ABSTRACT

A slot machine for playing games has a set of three normal reels, with symbols arranged on their peripheries. The normal reels are rotated in a normal game, and are stopped to determine a win, in accordance with a combination of symbols of the normal reels along a predetermined first winning line. A win is selected from a normal win and a specific win. A bonus game is triggered when the specific win is provided. There is at least one specific reel having symbols which are arranged on its periphery. The specific reel is rotated in the bonus game, and is stopped to determine the win, in accordance with a symbol on the specific reel at a predetermined winning position.

26 Claims, 5 Drawing Sheets



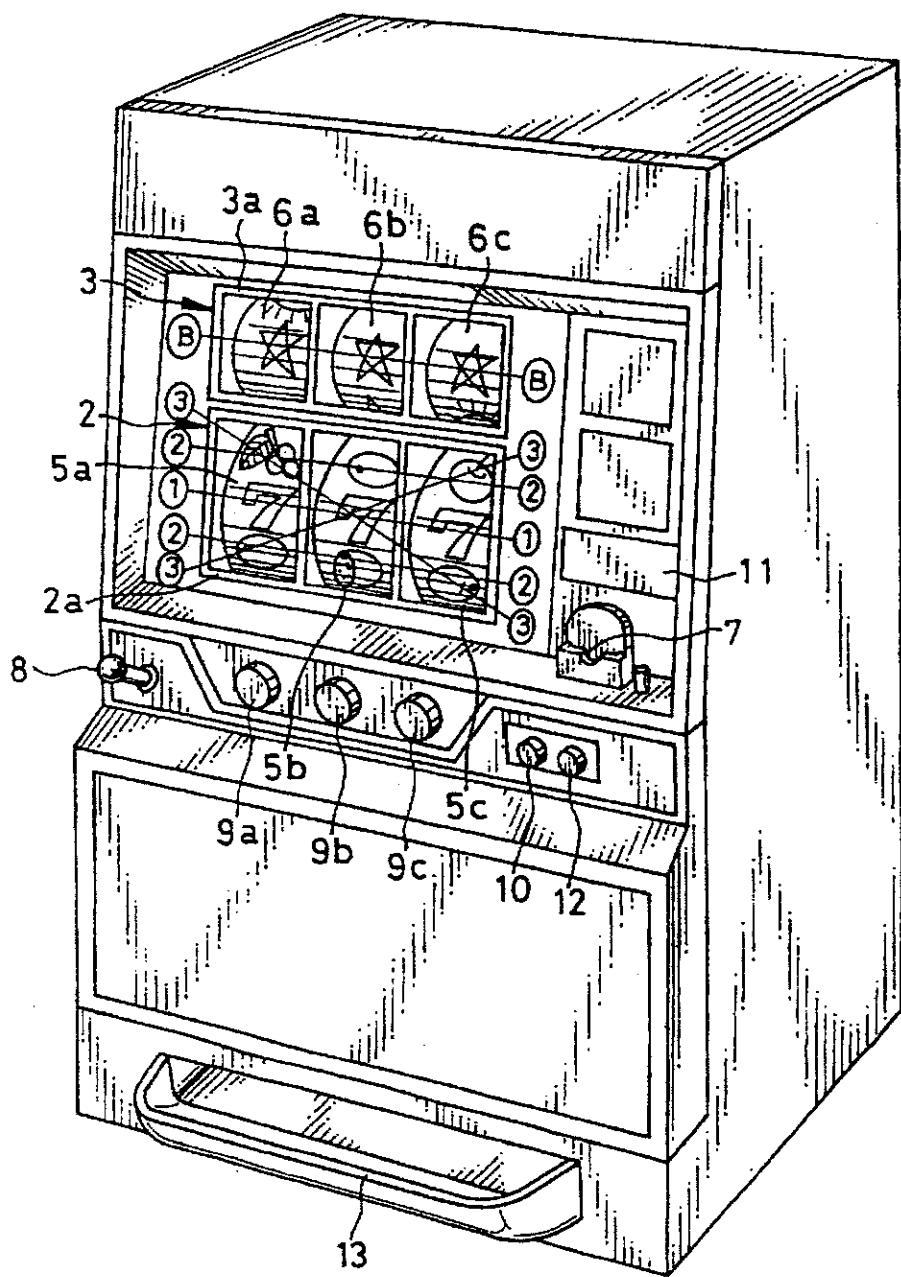
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FIG. 1

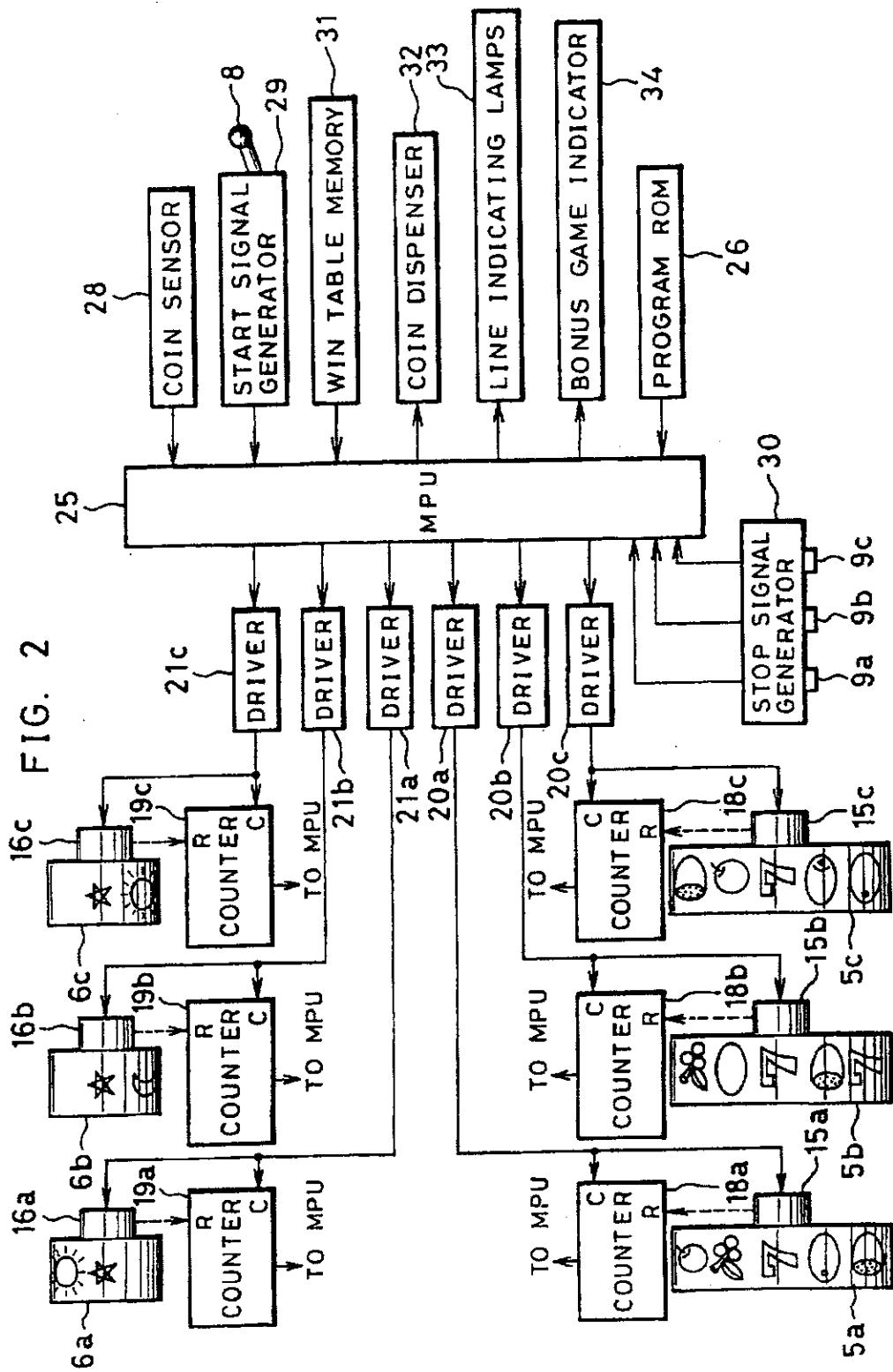


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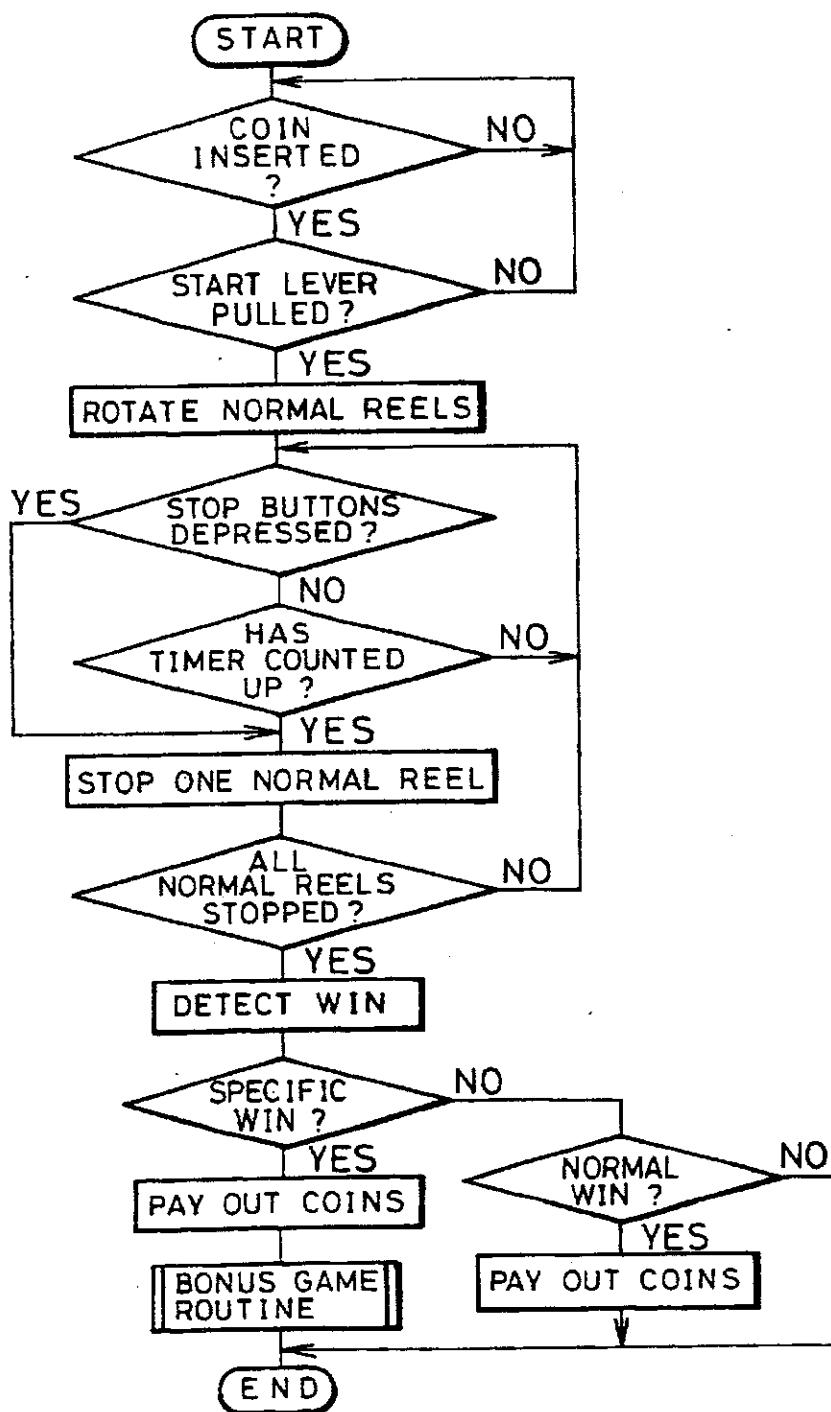
U.S. Patent

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FIG. 3



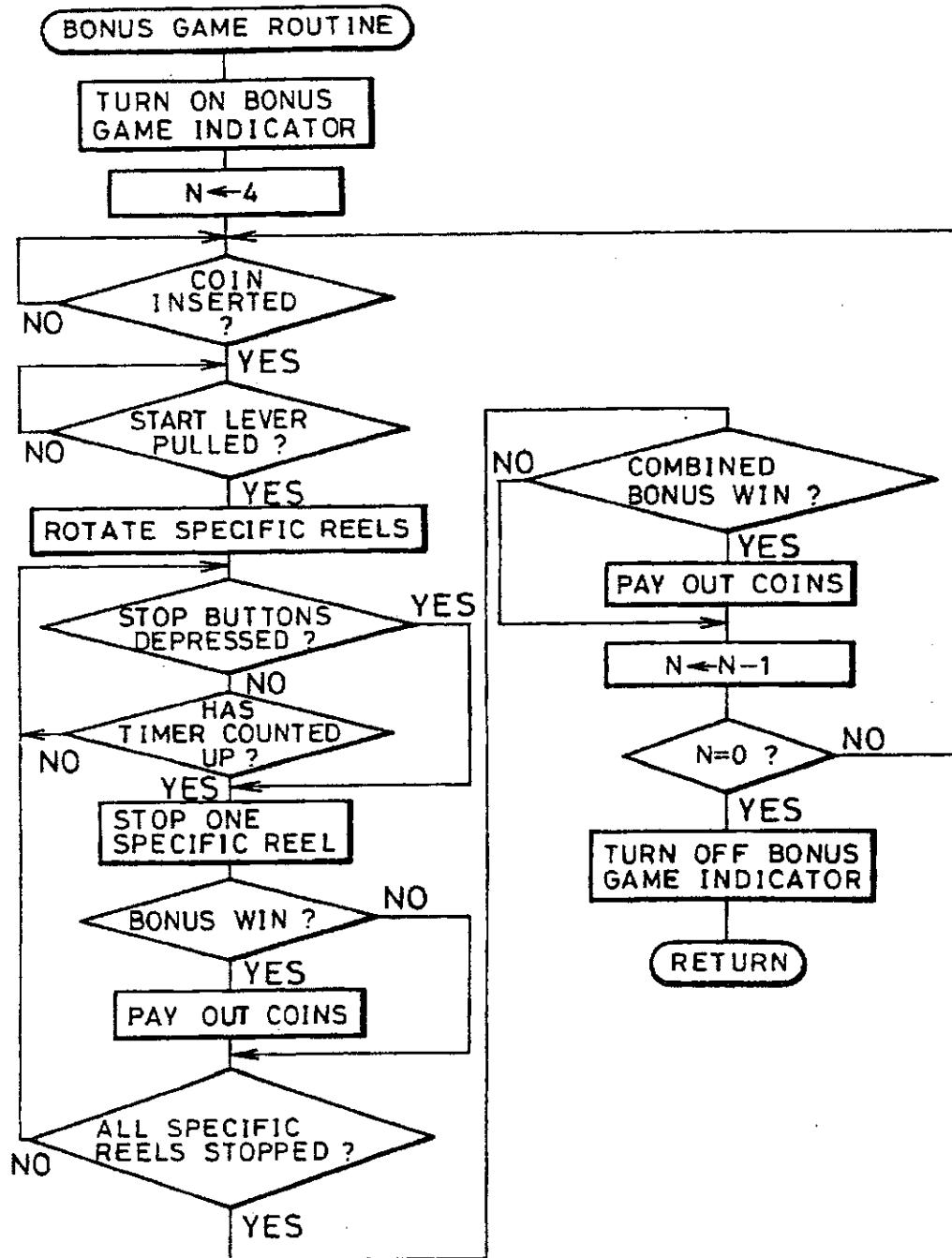
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FIG. 4



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FIG. 5

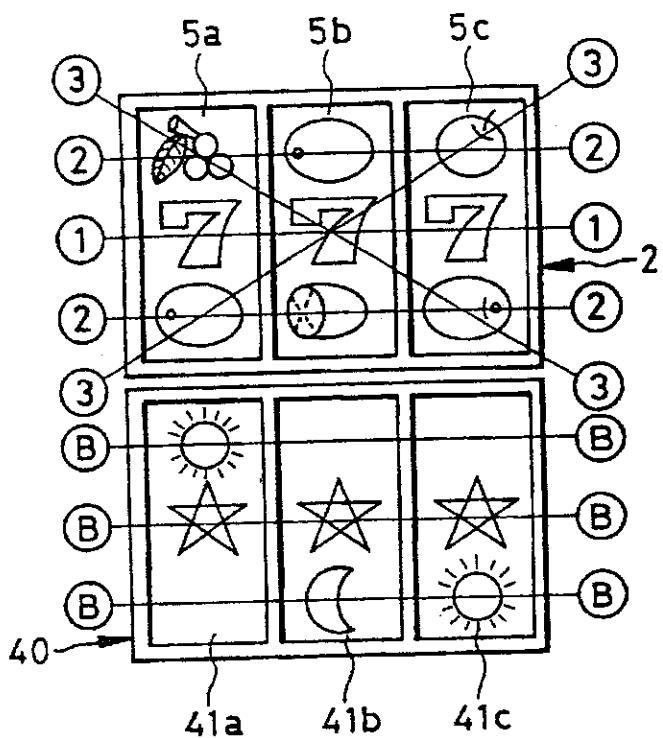
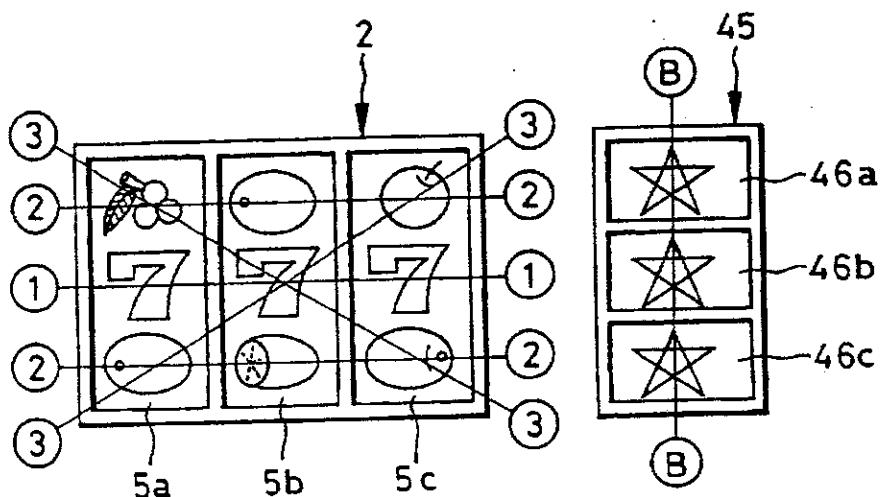


FIG. 6



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**SLOT MACHINE HAVING TWO DISTINCT  
SETS OF REELS**

**BACKGROUND OF THE INVENTION**

**1. Field of the Invention**

The present invention relates to a slot machine. More particularly, the present invention relates to a slot machine in which the appearance and the operation of reels are so improved as to heighten the player's interest in games played therewith.

**2. The Prior Art**

Slot machines are popular with game players no less than pinball machines. A slot machine has a set of symbol-bearing reels, or a CRT showing images of such rotary reels. At least one coin, token, medal or other disk of a predetermined kind (hereinafter referred to as a coin) is inserted into the slot machine, before a start button or start lever is externally operated to start playing a game. The reels and the like are rotated and then stopped according to probability, which is responsive to depression of stop buttons, or simply to a lapse of suitable time. A stopped combination of symbols appears along a winning line defined across the front of the reels. If the symbol combination as stopped is a specific winning combination, a player is given one of the various wins preset in the slot machine. With a win, the player is rewarded with payment of a preset number of coins, which are two to fifteen.

There have been recent slot machines in which it is possible to play not only the normal games but also bonus games, which have an appearance and operation different from those of the normal games, to attract players and heighten their interest in playing games. Among plural kinds of wins ranked differently, there is a big win or specific win, which can be given when a combination "7-7-7" appears along a winning line. Upon the occurrence of the big win, a great number of, for example 15, coins are paid out to the player. One or more bonus games are played next.

To play a bonus game, the reels are used as in normal games. A series of bonus games is executed in a manner as follows: a player inserts a coin. The three reels are started rotating at the same time. One of the three reels is stopped at first. If one of symbols around the stopped reel which indicates a bonus win is stopped along a winning line, then a bonus win is provided to pay out 15 coins to the player. Similar operations follow regarding the remaining two reels. Namely, the rotation of each reel is associated with the possibility of acquiring a bonus win. Subsequently the player inserts another coin, and causes the three reels to rotate. Then the series of bonus games is terminated when twelve bonus games are played, or when six bonus wins are given in less than twelve bonus games.

Playing a bonus game is far more advantageous than playing a normal game, because as many as 15 coins can be paid out for a simple stopping of one symbol on one reel before the remaining two reels stop. In other words, a player playing a bonus game enjoys a heightened probability of acquiring rewards over a normal game. The player can collect coins in increased numbers when playing bonus games. Accordingly, it is one of the greatest concerns to a player of a slot machine whether he can play bonus games.

In conventional slot machines, however, the appearance of the reels operated during bonus games is less spectacular and less attractive visually than in normal games, as each bonus win is caused by rotation of only a single reel. Although playing a bonus game is quite advantageous to a

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player, the less dramatic appearance of the reels in bonus games belies the advantageous situation of the player. Thus the conventional manner of operation in bonus games is likely to less than player's interest in playing games or the satisfaction of acquiring wins.

In conventional slot machines, the reels are provided with symbols used in normal games, including PLUM and LEMON, and bonus symbols, which are overlapped on PLUM, LEMON and the like, and used in bonus games to represent a bonus win, in such form as JAC or AAA. The reels thus have an excessively complicated appearance due to the combination of symbols for normal games and for bonus games. It is difficult for beginning players to discern those symbols. The conventional reels are disadvantageous also because of the difficulties of modifying the routines of bonus games if a designer of a slot machine has a new concept of bonus games for the purpose of seeking to impart further attractiveness to the slot machine.

**SUMMARY OF THE INVENTION**

In view of the foregoing problems, an object of the present invention is to provide a slot machine of highly attractive appearance in which bonus games can be played.

Another object of the present invention is to provide a slot machine in which the routine of executing a bonus game can be freely modified when the designer of the slot machine has a new concept of bonus games.

In order to achieve the above and other objects and advantages of this invention, a game is played in a slot machine to provide a win or loss, the win being one of plural kinds including a normal win, a specific win, and a bonus win. The game itself is also of plural kinds, including a normal game and a bonus game. A bonus game is allowed when a specific win occurs upon playing a normal game. A first reel set includes P normal reels of which the symbols are arranged on the periphery. The normal reels are rotated for a normal time. The normal reels are stopped to determine the normal win or the specific win, in accordance with a combination of symbols of the normal reels along a predetermined first winning line. At least one specific reel has symbols, which are arranged on the periphery thereof. The specific reel is rotated in the bonus game. The specific reel is stopped to determine the bonus win, in accordance with whether a symbol on the specific reel stops on a predetermined second winning line.

In a preferred embodiment, the slot machine includes P+Q reels. First to Pth ones of the reels are rotated together, to play a normal game. (P+1)th to (P+Q)th ones of the reels are rotated, to play a bonus game.

In the present invention, bonus games can be played with a highly attractive appearance. The routine of executing a bonus game can be freely modified when the designer of the slot machine has a new concept of bonus games.

**BRIEF DESCRIPTION OF THE DRAWINGS**

The above objects and advantages of the present invention will become more apparent from the following detailed description when read in connection with the accompanying drawings, in which:

FIG. 1 is a perspective view illustrating a slot machine of the present invention;

FIG. 2 is a schematic diagram illustrating circuitry of the slot machine of FIG. 1;

FIG. 3 is a flow chart illustrating a main routine of operation of the slot machine, including a normal game;

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FIG. 4 is a flow chart illustrating a subroutine of the slot machine for a bonus game;

FIG. 5 is a schematic diagram illustrating other preferred sets of reels, of which specific reels are enlarged together with an enlarged window for the specific reels; and

FIG. 6 is a schematic diagram illustrating still other preferred sets of reels, of which specific reels are horizontally rotatable.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

In FIG. 1 illustrating a slot machine of the present invention, a display window 2 is formed in a front panel for normal reels 5a to 5c to be rotated in a normal game. A display window 3 is formed above the display window 2 for specific reels 6a to 6c to be rotated in a bonus game or specific game, which is enabled if a predetermined condition is met.

Behind the display window 2, the three normal reels 5a to 5c are disposed in rotatable fashion about their horizontal shafts. The normal reels 5a to 5c constitute a first reel set, which is used in normal games. Behind the display window 3, the three specific reels 6a to 6c are disposed in rotatable fashion about their horizontal shafts. The specific reels 6a to 6c constitute a second reel set, which is used in bonus games. The periphery of each of the normal reels 5a to 5c and 6a to 6c has symbols. Inside the display window 2, three symbols on each of the normal reels 5a to 5c appear at a time externally. Inside the display window 3, one symbol on each of the specific reels 6a to 6c appears at a time externally.

A window frame 2a surrounding the window 2 and a window frame 3a surrounding the window 3 consist of covering members of white translucent plastic, and normal game indicator or bonus game indicator 34 (see FIG. 2) is incorporated behind the covering members. The normal or bonus game indicator consists of light-emitting diodes (LED). When playing a normal game with the normal reels 5a, 5b and 5c of the first reel set, the indicator in the window frame 2a is blinked to indicate visually the play of a normal game. When playing a bonus game with the specific reels 6a, 6b and 6c of the second reel set, the indicator in the window frame 3a is blinked to indicate the play of a bonus game. The LEDs in the window frame 3a illuminate in a single color, while the LEDs comprising bonus game indicator 34 in the window frame 3a are operated to illuminate in plural different colors. Accordingly the indication of a bonus game is more conspicuous than that of a normal game.

In the first reel set, 21 symbols are formed on each of the normal reels 5a to 5c, and include "7" and "CHERRY" and other fruits as illustrated in the drawings. As is common in conventional slot machines, a win is given when the reels are so stopped that three identical symbols are stopped along a validated winning line, which may be included in plural winning lines across the display window 2. Regarding the symbol CHERRY, a win is given differently, i.e. given when one or two CHERRY's are stopped along a validated winning line. On the specific reels 6a to 6c of the second reel set, there are formed four kinds of symbols and eight symbols, which are SUN, MOON, STAR and "blank" appearing respectively twice. None of the symbols SUN, MOON, STAR and "blank" is included in the first reel set.

The specific reels 6a, 6b and 6c of the second reel set have a smaller diameter than the normal reels 5a to 5c of the first reel set. Each of the specific reels 6a to 6c has a smaller number of symbols than those around the normal reels 5a to 5c. For the specific reels 6a to 6c of the second reel set, a

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single winning line is defined horizontally across the arrangement of the specific reels 6a to 6c. In a bonus game, the combination of symbols stopped along the winning line is automatically checked. If it coincides with a certain winning combination, then a win is given. In a bonus game, the specific reels 6a to 6c of the second reel set are stopped one after another. If a symbol other than the "blank" is stopped on the winning line, then a bonus win is given. The probability of a bonus win is higher than for any win associated with a normal game. Upon the stopping of all the specific reels 6a to 6c, if there are two identical symbols other than "blank" on the winning line, then a combined bonus win is given.

In the front panel of the slot machine, there are disposed a coin inlet slot 7, a start lever 8 and stop buttons 9a, 9b and 9c. There are marks 1, 2 and 3 disposed beside the display window 2 and associated with the five winning lines. Behind the marks of 1, 2 and 3, line indicating lamps 33 (see FIG. 2) are incorporated. Prior to the start of a normal game, one, two or three coins are inserted into the inlet slot 7. In response, the line indicating lamps 33 are selectively driven to illuminate the marks 1, 2 and 3 in association with the number of validated winning lines. When one coin is inserted, only the mark 1 is illuminated for one validated winning line. When two coins are inserted, the marks 1 and 2 are illuminated for three validated winning lines. When three coins are inserted, the marks 1, 2 and 3 are illuminated for five validated winning lines, inclusive of the three horizontal ones and two diagonal ones. The inlet slot 7 is used also prior to playing bonus games.

There is a credit-play button 10, which is depressed after a great number of coins are inserted into the inlet slot 7. One depression of the credit-play button 10 instructs the slot machine to play one coin by spending one of the inserted coins. A player can recognize the decrement of the inserted coins by checking an indicator 11, which indicates the present number of the inserted coins. If a command is entered to credit coins, the number of the credited coins is so controlled as to add the number of paid coins to the number of the credited coins. When a pay-out button 12 is depressed, all the credited coins are dispensed into a receptacle tray 13.

The start lever 8 is enabled to operate after insertion of the coin. Actuation of the start lever 8 starts the normal reels 5a to 5c rotating simultaneously for normal games, or starts the specific reels 6a to 6c rotating simultaneously for bonus games. The stop buttons 9a to 9c are enabled as soon as the normal reels 5a to 5c or 6a to 6c come to rotate at a constant speed after acceleration. When each of the stop buttons 9a to 9c is depressed, the reel associated with the depressed button is responsive stopped.

FIG. 2 illustrates circuitry of the slot machine. The normal reels 5a, 5b and 5c are directly driven by respective stepping motors 15a, 15b and 15c. The specific reels 6a, 6b and 6c are directly driven by respective stepping motors 16a, 16b and 16c. Counters 18a to 18c and 19a to 19c are associated with the respective stepping motors 15a to 15c and 16a to 16c, and count the drive pulses with which the stepping motors are supplied by drivers 20a to 20c and 21a to 21c. Each of the counters 18a to 18c and 19a to 19c has a count terminal C and a reset terminal R, by which the count in the counter is reset to zero upon movement of the stepping motor past its original position.

The arrangement of the symbols around the reels of the first and second reel sets is predetermined. One predetermined kind of symbol is associated with an original position

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of each stepping motor. When each reel is stopped, the count of the counter for the stopped reel is inputted into an MPU (microprocessor unit) 25, which electrically discerns which of the symbols is stopped along validated winning lines.

The MPU 25 generally controls the execution of the games in accordance with a gaming program stored in a program ROM 26. The MPU 25 is supplied with signals from a coin sensor 28, a start signal generator 29, and a stop signal generator 30. The coin sensor 28 detects a coin inserted into the inlet slot 7. The start signal generator 29 responds to operation of the start lever 8 to generate the start signal. The stop signal generator 30 responds to operation of the stop buttons 9a, 9b and 9c to generate the stop signal.

The MPU 25 refers to data stored in a win table memory 31 during the games, and supplies drive signals to a coin dispenser 32, the line indicator lamps 33 and a bonus game indicator 34. The table memory 31 stores win combination data representing win combinations of symbols in association with normal wins as a result of normal games, and numbers of reward coins in association with the win combination data. The table memory 31 also stores win combination data representing win combinations of symbols in association with bonus wins as a result of bonus games, and numbers of reward coins in association with the win combination data. The win table memory 31 is referred to by the MPU 25 to determine wins.

The coin dispenser 32 is driven upon an occurrence of a win for a game, and dispenses coins in a number associated with the size of the win to deposit them in the receptacle tray 13. The line indicator lamps 33 indicate which of the winning lines are validated in association with the number of inserted coins for the start of a normal game. The bonus game indicator 34 is driven when bonus games are triggered, and emits illumination by way of LEDs in the window frame 3a to indicate the play of a bonus game.

The operation of the above slot machine is described by referring further to the flow charts in FIGS. 3 and 4. A player inserts at most three coins through the inlet slot 7, and moves the start lever 8 to start a normal game. The normal reels 5a, 5b and 5c of the first reel set are started rotating simultaneously, and the rotational speed accelerates until the normal reels 5a to 5c rotate at their constant high speed. The stop buttons 9a to 9c are enabled. Then the stop buttons 9a to 9c are depressed in any order desired by the player. The depression of the buttons stops the supply of drive pulses for the stepping motors, to stop the reels. Note that, if the stop buttons 9a to 9c are never depressed during rotation of the reels 5a to 5c, the reels are automatically stopped, because drive pulses to the motors 15a to 15c are stopped upon counting up in a timer. This avoids unduly prolonging the duration of each game as played.

When all the normal reels 5a to 5c are stopped, there is made a judgment regarding the occurrence and the size of a win. As is described above, the counts in the counters 18a to 18c are read by the MPU 25. The data stored in the win table memory 31 for normal games is referred to, for detection of a normal win or loss, and the kind of the normal win. If a loss is detected, then the game is ended without any further step. If a normal win is detected, coins of which the number is associated with the kind of the normal win are paid out, to end the game.

As a result of win detection of the normal game, a "big" win is given as a specific win when a symbol combination "7-7-7" is stopped on a validated winning line. A predetermined number of, e.g. 15, coins are paid out, before triggering of a bonus game as illustrated in FIG. 4. The number

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of the coins paid out for the big win is predetermined to be greater than that for a normal win. It is to be noted that, in addition to "7-7-7", a big win or specific win can be provided in response to the stopping of a single specific symbol: each reel 5a to 5c can have a symbol "BIG". When at least one BIG is stopped on a validated winning line, responsiveness a big win can be determined.

When a bonus game is started, the bonus game indicator 34 is actuated to illuminate through the window frame 3a. The window frame 3a illuminates in visibly distinct plural colors, to display the occurrence of the bonus game so conspicuously, that not only the player at the slot machine but also other players and attendants around him are informed of the bonus game. In this way, the player about to play the bonus game is given great satisfaction.

To start a bonus game, one coin is inserted. The start lever 8 is operated. The specific reels 6a to 6c of the second reel set are started rotating simultaneously. The stop buttons 9a to 9c are depressed as desired by the player, to stop the second reel set, reel after reel. If the stop buttons 9a to 9c are never depressed, the specific reels 6a to 6c are stopped automatically upon counting up of the timer, in the same manner as for a normal game.

One of the reels of the second reel set is stopped. In response to this, the MPU 25 reads the count of the counter associated with the stopped reel among the counters 19a to 19c, and refers to data stored in the win table memory 31 for the bonus game, to detect the occurrence of a bonus win. On the specific reels 6a to 6c of the second reel set, there are formed eight symbols, which are SUN, MOON, STAR and "blank" appearing respectively twice. If a symbol other than "blank" is stopped on the winning line, then a bonus win is given. For a bonus win with the SUN symbol, 15 coins are paid out. For a bonus win with the MOON symbol, 10 coins are paid out. For a bonus win with the STAR symbol, five coins are paid out. It is of course possible to predetermine the numbers of the coins for those bonus wins differently as desired.

When all the reels of the second reel set are stopped, the MPU 25 further refers to data stored in the win table memory 31, and detects a symbol combination of the specific reels 6a to 6c stopped along the winning line. If at least two identical symbols other than "blank" are stopped along the winning line, then coins are paid out as a reward for a combined bonus win. If at least two SUNs are stopped, 30 coins are paid out. If at least two MOONS are stopped, 20 coins are paid out. If at least two STARS are stopped, 10 coins are paid out. It is possible to predetermine the numbers of the coins for those combined bonus wins differently as desired.

Thereupon, the first bonus game played with the one coin is ended. Then coins are successively inserted, to play three other bonus games in similar fashion. In other words, four bonus games are played in all. The number of the four games is predetermined as programmed in the flow chart of FIG. 4 at the step of "N<=4". It is possible differently to predetermine the number of the bonus games as desired. Furthermore, it is possible to predetermine plural kinds of big wins or specific wins to occur upon playing normal games. With the different kinds of specific wins, it is possible to associate different numbers of playable bonus games.

When four bonus games are ended, the bonus game indicator 34 is turned off. The bonus game arrangement is placed on standby for a normal game. In the bonus games, the probability of winning is higher than for normal games.

The player will thus be likely to be rewarded with a greater number of coins. The second set of the specific reels 6a to 6c is marked for bonus games differently from the first set of the normal reels 5a to 5c for normal games, that is, the symbols provided for the second reel set are different from those of the first reel set, and are of types unfamiliar to players in gaming halls. Accordingly, the slot machine has a special interest for players playing games with it. In the present invention, bonus games are played with specific reels that are exclusive to the bonus games, which are also useful in further predetermining other variants of bonus games.

Referring to FIG. 5, another preferred embodiment of the present invention will now be described. Under the display window 2, there is formed another display window 40, which has a size equal to the display window 2 and is used for bonus games. There are reels 41a to 41c behind the display window 40 specific to bonus games. The specific reels 41a to 41c have a diameter equal to that of the normal reels 5a to 5c of the first reel set, and are also rotatable about a horizontal axis. The peripheries of the specific reels 41a to 41c are provided with symbols, which are used in bonus games, and are as many in number as the first reel set. Three of the symbols on each specific reel are observable through the display window 40. Three horizontal winning lines are defined across the display window 40 for the bonus games. All the winning lines are rendered effective in playing bonus games.

The embodiment of FIG. 5 has plural winning lines for bonus games. It is thus possible to heighten the probability of bonus wins and combined bonus wins. As compared with the former embodiment, the specific reels 41a to 41c can be provided with a greater number of symbols. It is possible to increase the kinds of symbols specified for bonus games, to enhance interest in the game. It is possible in addition to the horizontal winning lines to define two diagonal winning lines, in a manner similar to those for the reel set of normal games.

FIG. 6 illustrates another preferred embodiment characterized by a vertically elongated display window 45 which is formed beside the display window 2. Reels 46a to 46c for bonus games are rotatable about a vertical rotational axis. The embodiment of FIG. 6 heightens the interest of the player playing bonus games, as the specific reels 46a to 46c for the bonus games are rotated differently from the normal reels 5a to 5c. It is of course possible to widen the display window 45 horizontally to a size wherein three of the symbols on each specific reel appear simultaneously. In FIG. 6, only one winning line is depicted. However, plural winning lines can also be formed by horizontally widening the display.

In the above embodiments, the slot machine has three normal reels for normal games. The present invention is however applicable to a slot machine having four or more normal reels for normal games. In the above embodiments, the slot machine has three specific reels for bonus games. The present invention is however applicable to a slot machine having one, two, four or more specific reels for bonus games. In the above embodiments, the specific reels for bonus games are as many in number as the normal reels for normal games. Alternatively, it is possible for bonus games to use a different number of normal reels from the number of specific reels for normal games. If fewer specific reels for bonus games are used, an advantage is the reduction of the space required for incorporation of the specific reels for bonus games. Such a slot machine will thus not be excessively large. It is possible to modify the size, position

and orientation of the specific reels for bonus games as desired by design of the slot machine.

In the above embodiments, the triggering of the bonus games is conditioned to occur upon stopping of "7-7-7" along a winning line of the normal reels. Alternatively, the triggering of the bonus games can be conditioned differently. The bonus games may be triggered upon stopping of one particular symbol (such as "BIG") on one of the winning lines. It is further possible to vary the symbols around the reels. In the above, there is no symbol common to the reels for the bonus games and the normal games. However it is possible for variant specific reels to include some of the symbols for the normal games. Symbols "7" can be included on the reels for bonus games. It is possible to set an extraordinarily big win which can be given on the occurrence of the stopped combination of "7-7-7" on the normal reels with the stopped combination of "7-7-7" on the specific reels. For the extraordinarily big win, hundreds of coins may be paid out.

The present invention is also applicable to a slot machine which has only one stop button, and in which the three reels can be stopped at different moments successively after manual depression of the stop button. It is possible to design the slot machine such that the stop button must be depressed three times, or can be depressed only once, to trigger the stopping of the three reels.

The present invention is also applicable to a slot machine which does not have any stop button, and in which the reels are automatically stopped at random.

Although the present invention has been fully described by way of the preferred embodiments thereof with reference to the accompanying drawings, various changes and modifications will be apparent to those having skill in this field. Therefore, unless otherwise these changes and modifications depart from the scope of the present invention, they should be construed as being included therein.

I claim:

1. A slot machine in which a game is played to provide a win or a loss, said win being one of plural kinds including a normal win, a specific win, and a bonus win, said game being one of plural kinds including a normal game and a bonus game, said bonus game being allowed when said specific win is provided upon playing of a said normal game, said slot machine comprising:
  - a first reel set, including P normal reels having symbols arranged on their peripheries, P being at least two, said normal reels rotating during a said normal game, said normal win or a said specific win, in accordance with the combination of symbols on said normal reels stopping along a predetermined first winning line displayed in a first window; and
  - at least one specific reel having symbols arranged on its periphery, said specific reel rotating during a said bonus game, said specific reel stopping to display a said bonus win in a second window spaced from said first window, in accordance with the presence of at least one symbol on said specific reel in a predetermined winning position.
2. A slot machine as defined in claim 1, further comprising:
  - a controller for selecting one of said normal game and said bonus game;
  - a first driver section, connected to said controller, for driving said normal reels respectively to rotate together when said normal game is selected through said controller; and

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a second driver section, connected to said controller, for driving said at least one specific reel to rotate when said bonus game is selected through said controller.

3. A slot machine as defined in claim 1, further comprising:

a first position detector device, associated with said normal reels, for detecting respective stopped positions of said normal reels, an address constituted by a combination of said stop positions of said normal reels; and a win table memory for storing data on said win at said address, said controller accessing said win table memory at said address, to determine the occurrence of a said win and said kind of said win.

4. A slot machine as defined in claim 1, wherein said game is played by betting a coin, coins are paid out when said win occurs, and said specific win pays out a greater number of coins than said normal win.

5. A slot machine as defined in claim 1, wherein said symbols arranged around said specific reels are different from said symbols arranged around said at least one normal reel.

6. A slot machine as defined in claim 3, wherein said at least one specific reel comprises Q specific reels, Q being at least two, said specific reels include a first specific reel and Q-1 second specific reels, and together constitute a second reel set, and are rotated together to play said bonus game.

7. A slot machine as defined in claim 6, wherein a controller starts said Q specific reels rotating for said bonus game, stops said first specific reel, and subsequently stops said second specific reels, and said controller re-triggers said normal game after playing of at least one said bonus game;

further comprising a second position detector device associated with said Q specific reels, for detecting respective stopped positions of said specific reels;

wherein said win table memory further stores data of said bonus win and data of a combined bonus win, an address of said bonus win data being a stopped position of said first specific reel, an address of said combined bonus win data being a combination of said stopped positions of said Q specific reels, and said controller determines said bonus win and said combined bonus win, in accordance with said detected stopped positions of said Q specific reels.

8. A slot machine as defined in claim 7, wherein a said bonus game is played by betting a single coin, and said controller re-triggers said normal game after playing of N bonus games, wherein N is a predetermined number of at least one.

9. A slot machine as defined in claim 1, wherein said normal reels and said at least one specific reel are rotated respectively about horizontally oriented axes.

10. A slot machine as defined in claim 1, wherein said normal reels are rotated about a horizontally oriented axis, and said at least one specific reel is rotated about a vertically oriented axis.

11. A slot machine as defined in claim 1, wherein said at least one specific reel has a diameter substantially equal to a diameter of said normal reels, and has as many different symbols as said symbols on said normal reels.

12. A slot machine as defined in claim 6, wherein P=Q, and said normal reels and said specific reels are arranged in a  $2 \times P$  matrix.

13. A slot machine as defined in claim 1, wherein said at least one specific reel has a diameter smaller than a diameter of said normal reels, and has fewer different said symbols than said normal reels.

14. A slot machine as defined in claim 6, wherein said first winning line comprises plural lines, and said winning position is a single line.

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15. A slot machine as defined in claim 1, further comprising

a bonus game indicator, disposed closely to said second window, and driven during a said bonus game, for indicating execution of said bonus game.

16. A slot machine as defined in claim 15, wherein said bonus game indicator includes at least one light-emitting diode.

17. A slot machine as defined in claim 1, wherein said specific win is associated with at least one of a symbol combination comprising P symbols of a said common kind and a symbol combination containing at least one symbol of a said specific kind, said common kind and said specific kind being included in said symbols on said normal reels.

18. A method of controlling a slot machine, said slot machine including P+Q reels having symbols arranged on their peripheries, P being at least two and Q being at least one, said reels being rotated to play a game, said reels being stopped to display a win, in accordance with the combination of symbols on said reels stopping along a predetermined winning line, said win comprising a normal win or a specific win, said game comprising a normal game and a bonus game, said bonus game being allowed when said specific win is displayed, said slot machine control method comprising the steps of:

rotating first the Pth ones of said reels together, to play said normal game;

rotating (P+1)th to (P+Q)th ones of said reels together, to play said bonus game; and

displaying the symbols on the winning line of the (P+1)th to (P+Q)th ones of said reels in a display spaced from the first Pth ones of said reels.

19. A slot machine control method as defined in claim 18, further comprising the steps of:

storing data of a said win, an address of said win data being a combination of stopped positions of said first to Pth reels, said win being one of a normal win and a specific win;

detecting respective said stopped positions of said first to Pth reels; and

determining said normal win or said specific win, in accordance with said detected stopped positions of said first to Pth reels.

20. A slot machine control method as defined in claim 18, wherein said first to Pth reels are rotated about a common horizontal axis, and said (P+1)th to (P+Q)th reels are rotated about a common vertical axis.

21. A slot machine control method as defined in claim 18, wherein said Q is an integer of at least 2.

22. A slot machine control method as defined in claim 18, further comprising the step of stopping said (P+1)th reel while said (P+1)th to (P+Q)th reels rotate together.

23. A slot machine control method as defined in claim 18, further comprising the steps of:

detecting a stopped position of said (P+1)th reel; and determining a bonus win, in accordance with said detected stopped position of said (P+1)th reel.

24. A slot machine control method as defined in claim 18, further comprising steps of:

stopping said (P+2)th to (P+Q)th reels after stopping of said (P+1)th reel;

detecting respective stopped positions of said (P+2)th to (P+Q)th reels; and

determining a combined bonus win, in accordance with said detected stopped positions of said (P+1)th to (P+Q)th reels.

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25. A slot machine including P+Q reels having symbols arranged on their peripheries, P being at least two and Q being at least one, said reels being rotated to play a game, said reels being stopped to display a win, in accordance with a combination of symbols of said reel stopping along a predetermined winning line, said win comprising a normal win or a specific win, said game comprising a normal game and a bonus game, said bonus game being allowed when said specific win is displayed, said slot machine further comprising:

means for rotating first to Pth ones of said reels together, to play said normal game;

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means for rotating (P+1)th to (P+Q)th ones of said reels together, to play said bonus game; and  
a window for displaying the symbols on the winning line of said (P+1)th to (P+Q)th ones of said reels, said window being spaced from the first to Pth ones of said reels.

26. The slot machine of claim 25 further comprising a periphery for said window which is adapted to be illuminated when said bonus game is to be played.

\* \* \* \* \*

**EXHIBIT P**



US006712698B2

(12) **United States Patent**  
Paulsen et al.

(10) **Patent No.:** US 6,712,698 B2  
(45) **Date of Patent:** Mar. 30, 2004

(54) **GAME SERVICE INTERFACES FOR PLAYER TRACKING TOUCH SCREEN DISPLAY**

(75) **Inventors:** Craig A. Paulsen, Reno, NV (US); Jamal Benbrahim, Reno, NV (US); Greg A. Benoy, Reno, NV (US)

(73) **Assignee:** IGT, Reno, NV (US)

(\*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1 day.

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(22) **Filed:** Sep. 20, 2001

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(52) **U.S. Cl.:** 463/30; 463/16; 463/20; 463/42

(58) **Field of Search:** 463/16-20, 25-28, 463/30, 40-42

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

|             |   |         |                  |
|-------------|---|---------|------------------|
| 4,072,930 A | * | 2/1978  | Lucero et al.    |
| 4,283,709 A | * | 8/1981  | Lucero et al.    |
| 4,339,798 A | * | 7/1982  | Hedges et al.    |
| 4,553,222 A | * | 11/1985 | Kurland et al.   |
| 4,856,787 A | * | 8/1989  | Itkis            |
| 5,042,809 A | * | 8/1991  | Richardson       |
| 5,179,517 A | * | 1/1993  | Sarbin et al.    |
| 5,371,345 A | * | 12/1994 | LeStrange et al. |
| 5,429,361 A | * | 7/1995  | Raven et al.     |
| 5,470,079 A | * | 11/1995 | LeStrange et al. |
| 5,643,086 A | * | 7/1997  | Alcorn et al.    |
| 5,741,183 A | * | 4/1998  | Acres et al.     |
| 5,761,647 A | * | 6/1998  | Boushy           |
| 5,770,533 A | * | 6/1998  | Franchi          |
| 5,833,540 A | * | 11/1998 | Miodunski et al. |
| 5,919,091 A | * | 7/1999  | Bell et al.      |

|             |           |               |               |         |
|-------------|-----------|---------------|---------------|---------|
| 5,951,397 A | 9/1999    | Dickinson     | .....         | 463/36  |
| 5,971,271 A | **10/1999 | Wynn et al.   |               |         |
| 5,999,808 A | *         | 12/1999       | LaDue         |         |
| 6,003,013 A | 12/1999   | Boushy et al. | .....         | 705/10  |
| 6,048,269 A | ** 4/2000 | Burns et al.  |               |         |
| 6,089,975 A | 7/2000    | Dunn          | .....         | 463/16  |
| 6,104,815 A | 8/2000    | Alcorn et al. | .....         | 380/251 |
| 6,106,396 A | 8/2000    | Alcorn et al. | .....         | 463/29  |
| 6,110,041 A | *         | 8/2000        | Walker et al. |         |

(List continued on next page.)

**FOREIGN PATENT DOCUMENTS**

|                    |        |       |            |
|--------------------|--------|-------|------------|
| EP 0 698 858 B1    | 2/2002 | ..... | G06K/11/16 |
| WO WO 99/10061     | 3/1999 | ..... | A63F/9/22  |
| WO WO 02/058020 A2 | 7/2002 | ..... | G07F/17/32 |

**OTHER PUBLICATIONS**

Mark Fischetti, At Your Fingertips—Touch Screens, Apr. 2001, Scientific American, pp. 102-103.

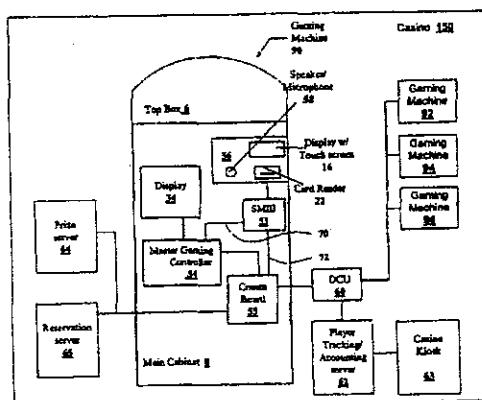
*Primary Examiner*—Michael O'Neill

(74) **Attorney, Agent, or Firm:** Beyer, Weaver & Thomas

(57) **ABSTRACT**

A disclosed a player tracking unit provides a touch screen display with a touch screen controller integrated into the touch screen sensor assembly. Game service interfaces may be presented on the touch screen display that allow a user to obtain one or more game services. The game service interfaces may include buttons with alpha-numeric symbols, function keys and hand-writing recognition capabilities that are recognized using input data from the touch screen sensor. Thus, with the touch screen sensor, a user may navigate through the game service interface and supply gaming information required to obtain a game service. In one embodiment, a registration game service interface is provided that allows a player to join a player tracking program at the gaming machine. In another embodiment, a metering game service interface with a calculator is provided that allows a casino operator to obtain and operate on metering information at a gaming machine.

87 Claims, 14 Drawing Sheets



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## U.S. PATENT DOCUMENTS

|              |         |               |               |  |
|--------------|---------|---------------|---------------|--|
| 6,113,495 A  | 9/2000  | Walker et al. | .....         | 463/42                                 |
| 6,149,522 A  | 11/2000 | Alcorn et al. | .....         | 463/29                                 |
| 6,161,059 A  | *       | 12/2000       | Tedesco       |  |
| 6,162,122 A  | 12/2000 | Acres et al.  | .....         | 463/29                                 |
| 6,183,362 B1 | 2/2001  | Boushy        | .....         | 463/25                                 |
| 6,190,256 B1 | 2/2001  | Walker et al. | .....         | 463/25                                 |
| 6,210,279 B1 | 4/2001  | Dickinson     | .....         | 463/37                                 |
| 6,227,972 B1 | *       | 5/2001        | Walker et al. |  |
| 6,244,958 B1 | 6/2001  | Acres         | .....         | 463/26                                 |
| 6,247,643 B1 | **      | 6/2001        | Lucero        |  |
| 6,253,119 B1 | **      | 6/2001        | Dabrowski     |  |
|              |         |               |               | 6,264,560 B1 ** 7/2001 Goldberg et al. |
|              |         |               |               | 6,267,671 B1 ** 7/2001 Hogan           |
|              |         |               |               | 6,280,328 B1 * 8/2001 Hoich et al.     |
|              |         |               |               | 6,307,956 B1 ** 10/2001 Black          |
|              |         |               |               | 6,341,353 B1 ** 1/2002 Herman et al.   |
|              |         |               |               | 6,368,216 B1 * 4/2002 Hedrick et al.   |
|              |         |               |               | 6,371,852 B1 4/2002 Acres ..... 463/25 |
|              |         |               |               | 6,379,246 B1 ** 4/2002 Dabrowski       |
|              |         |               |               | 6,383,076 B1 * 5/2002 Tiedeken         |
|              |         |               |               | 6,409,595 B1 * 6/2002 Uihlein et al.   |
|              |         |               |               | 6,443,843 B1 ** 9/2002 Walker et al.   |

\* cited by examiner

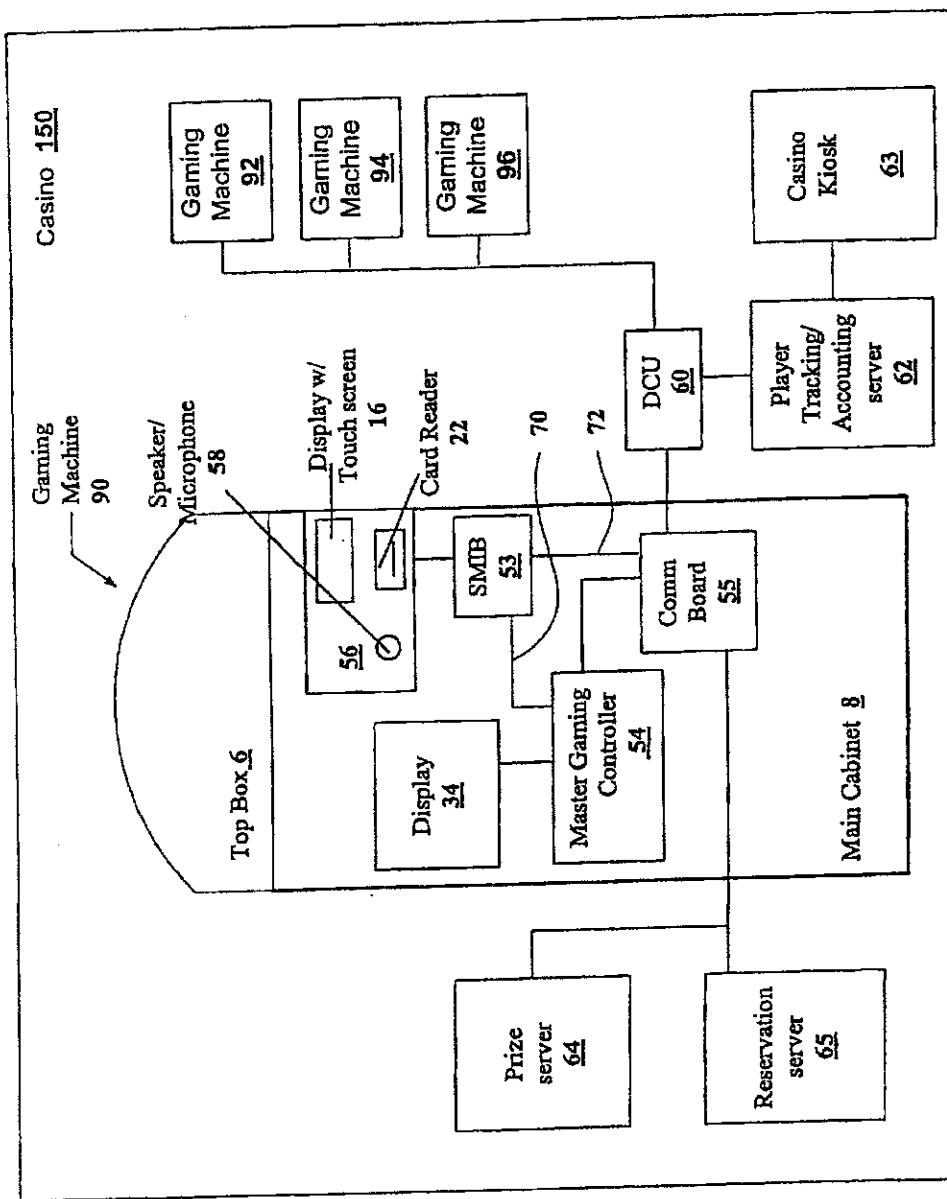
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FIG. 1

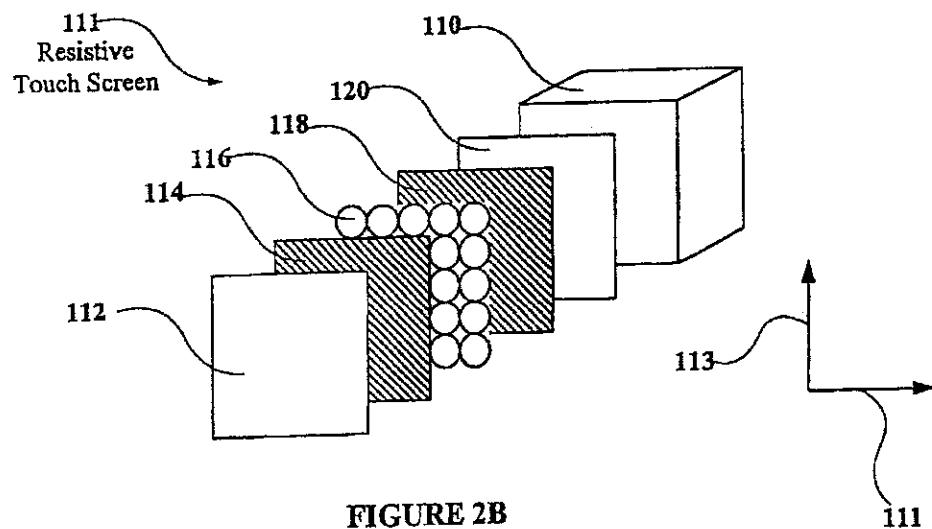
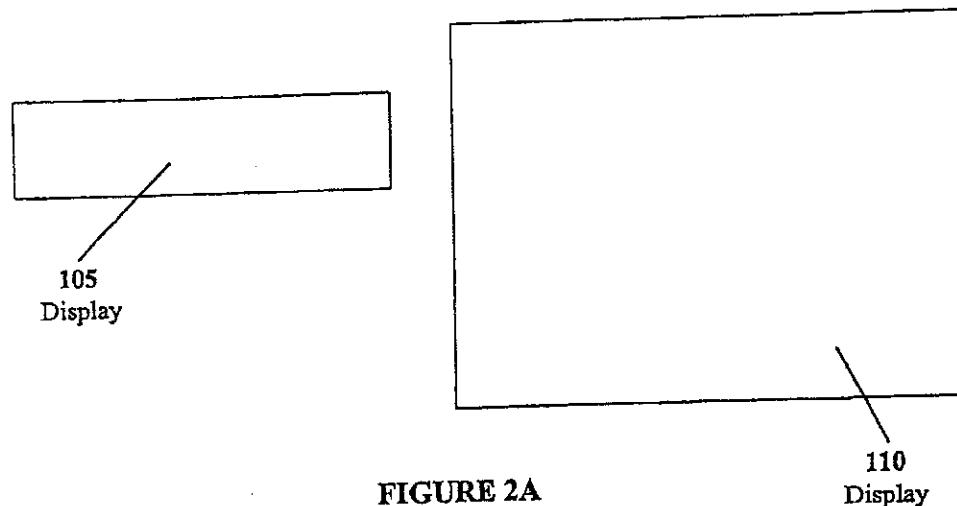


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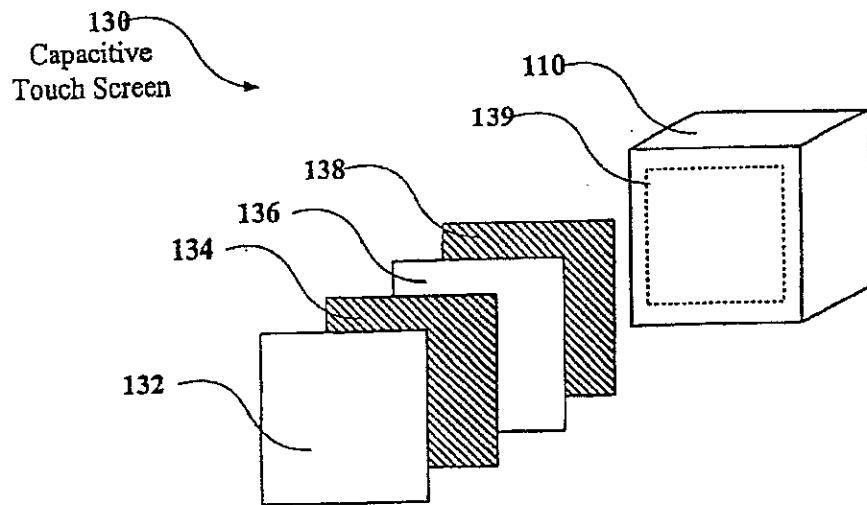


FIGURE 2C

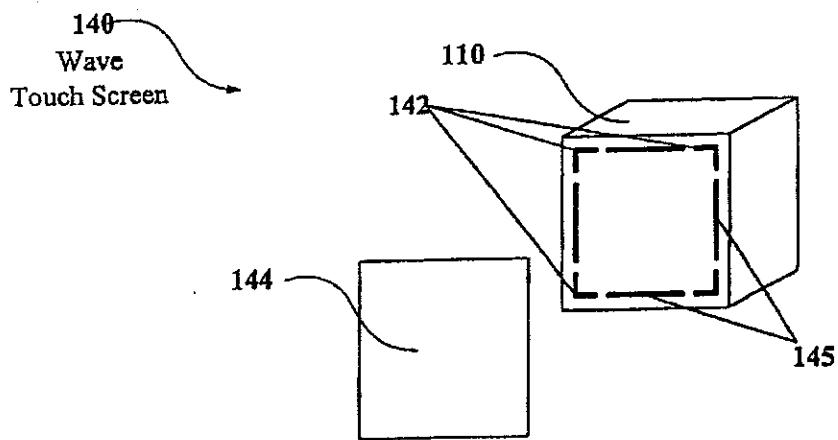


FIGURE 2D

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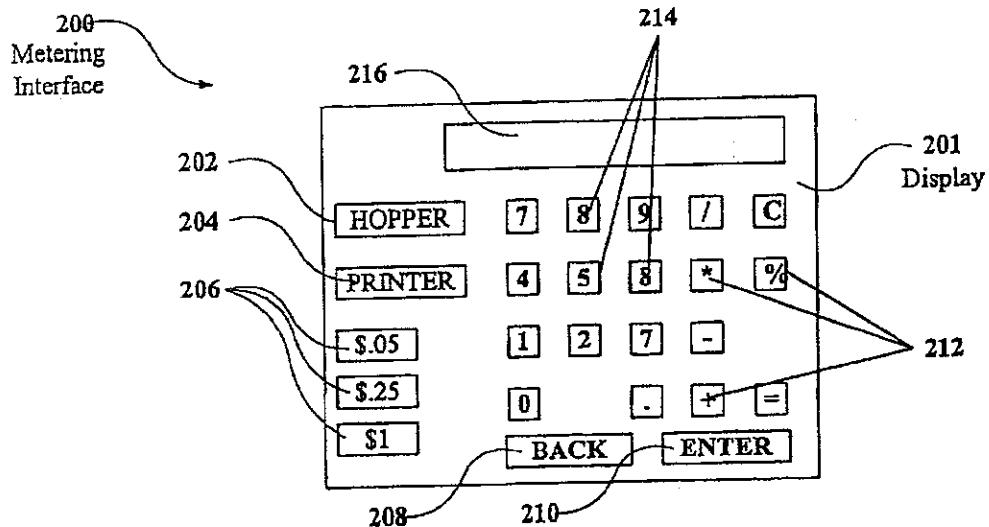


FIGURE 3A

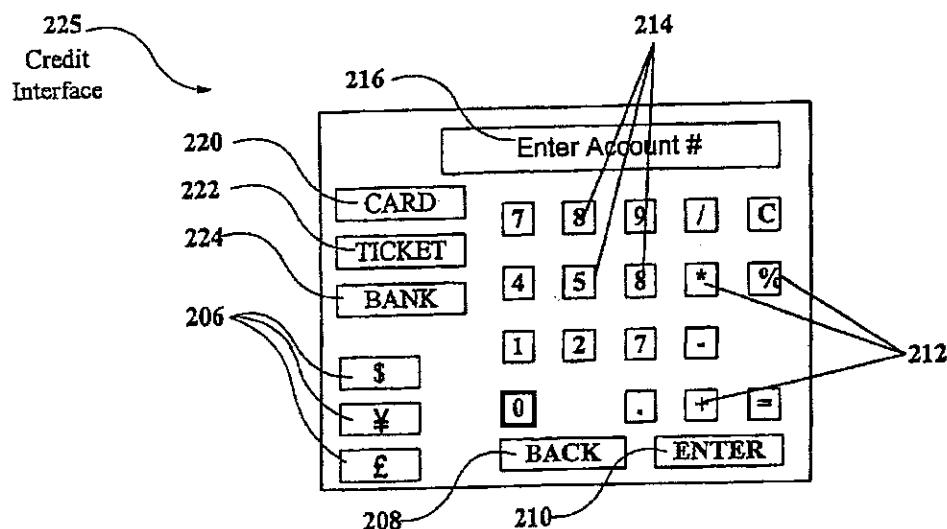


FIGURE 3B

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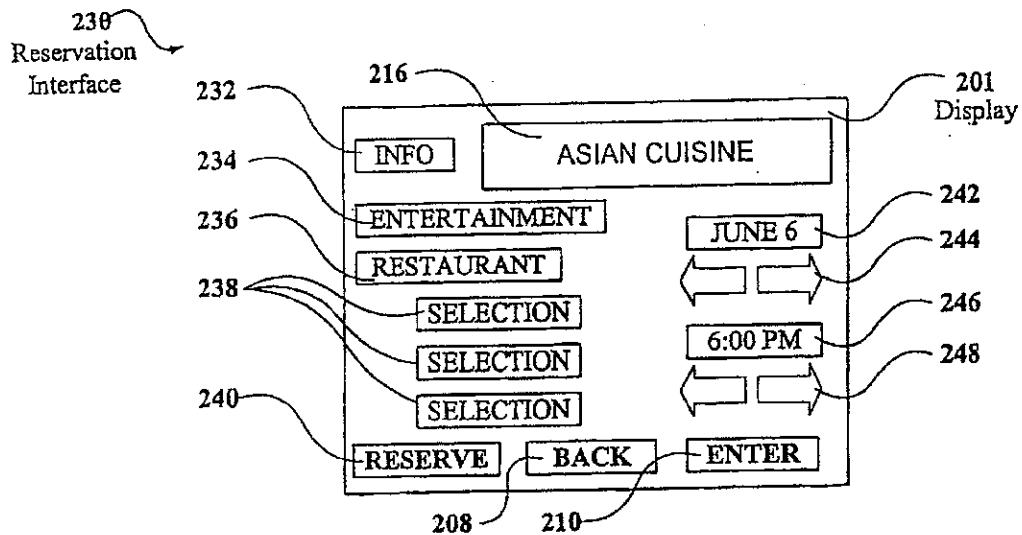


FIGURE 3C

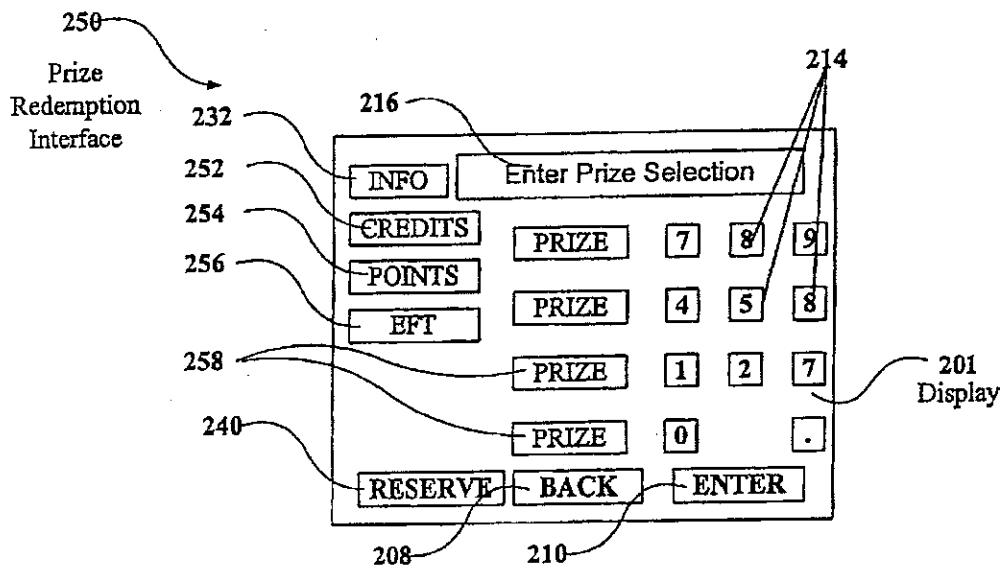


FIGURE 3D

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Player Tracking  
Registration  
Interface

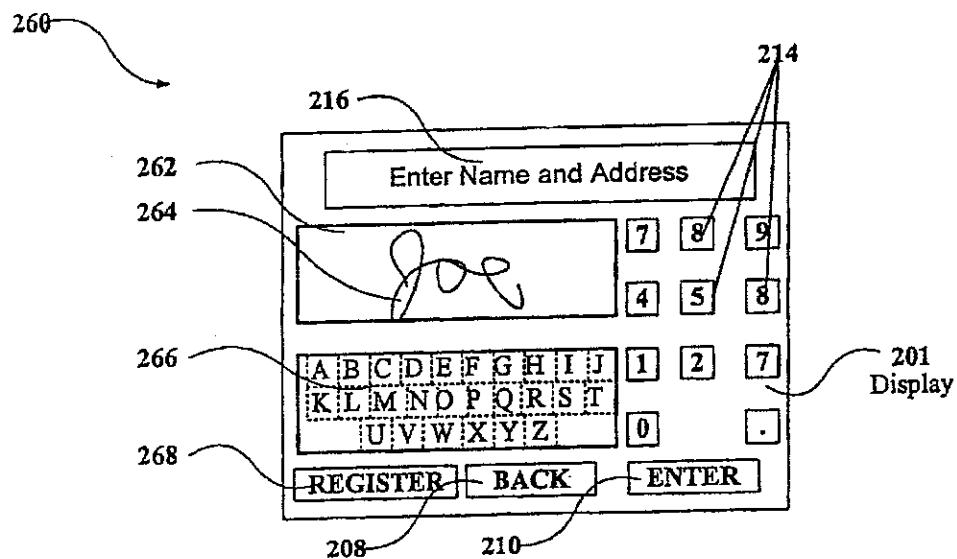


FIGURE 3E

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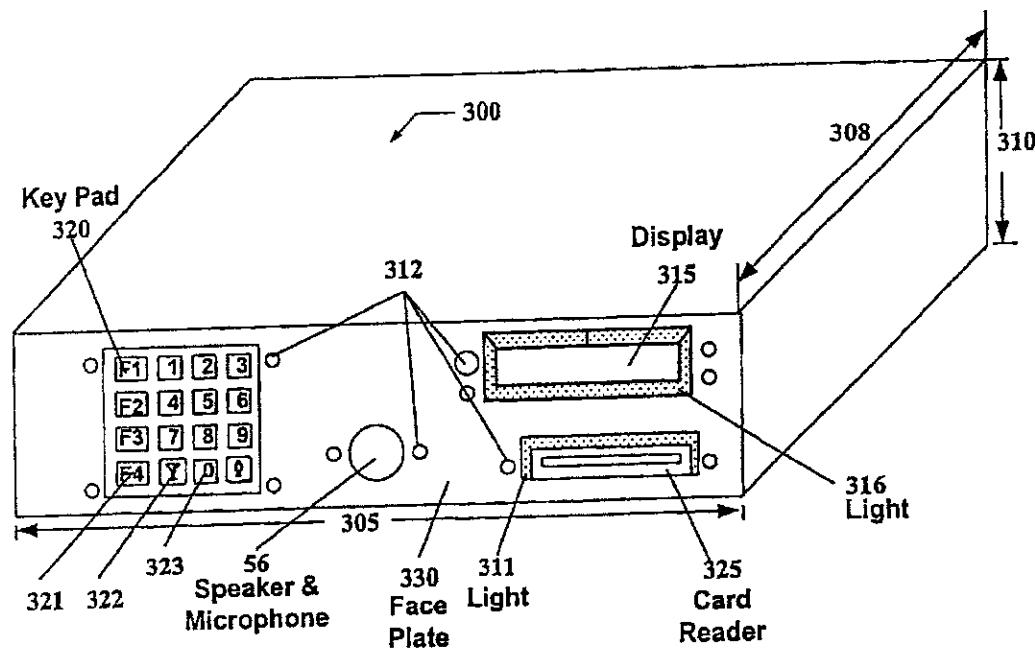


FIG. 4A

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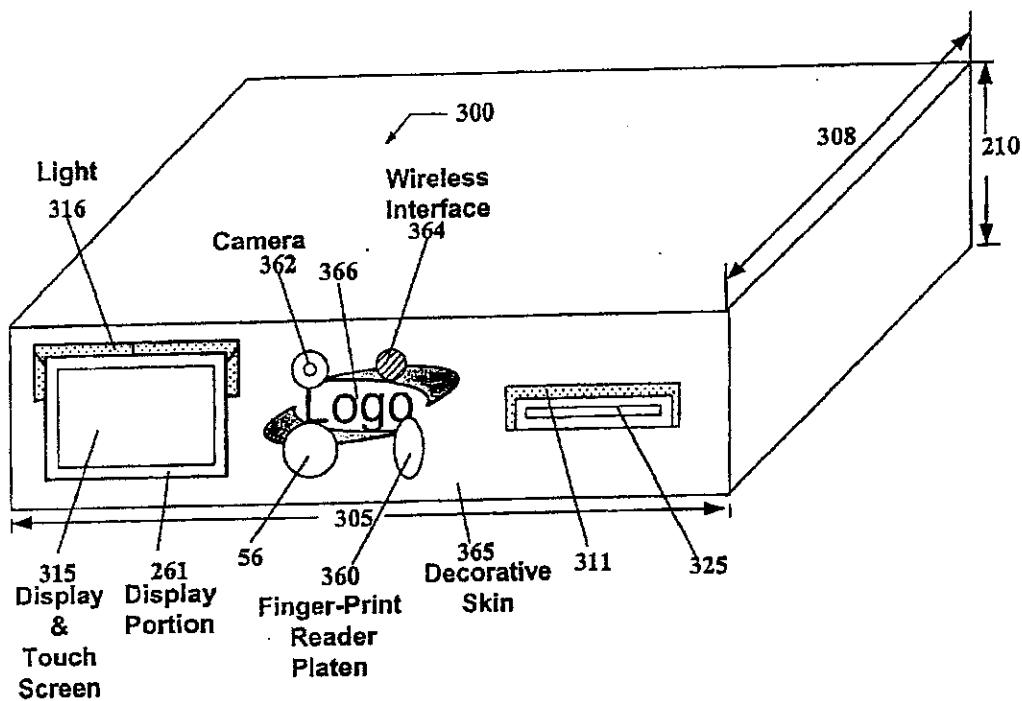


FIG. 4B

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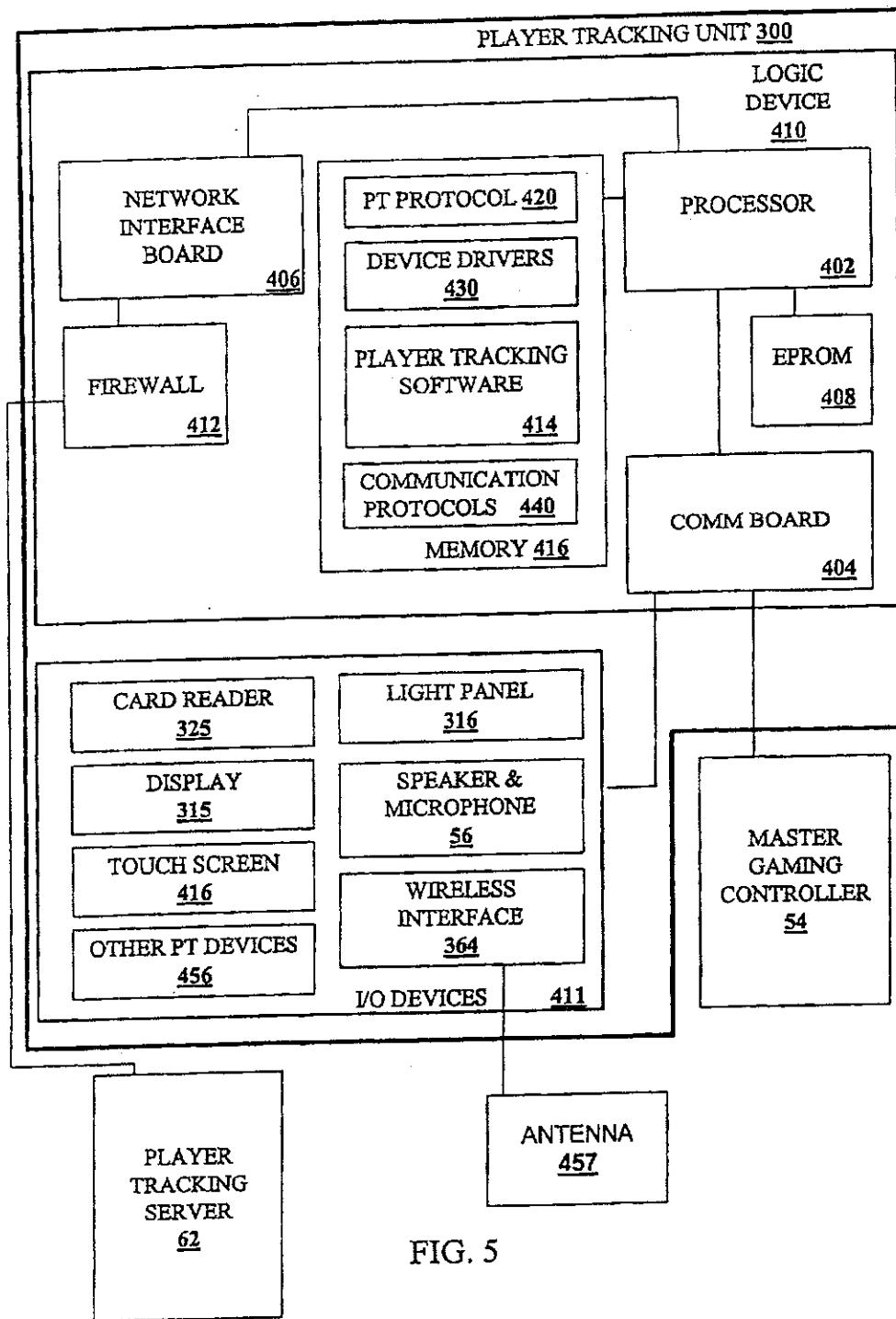


FIG. 5

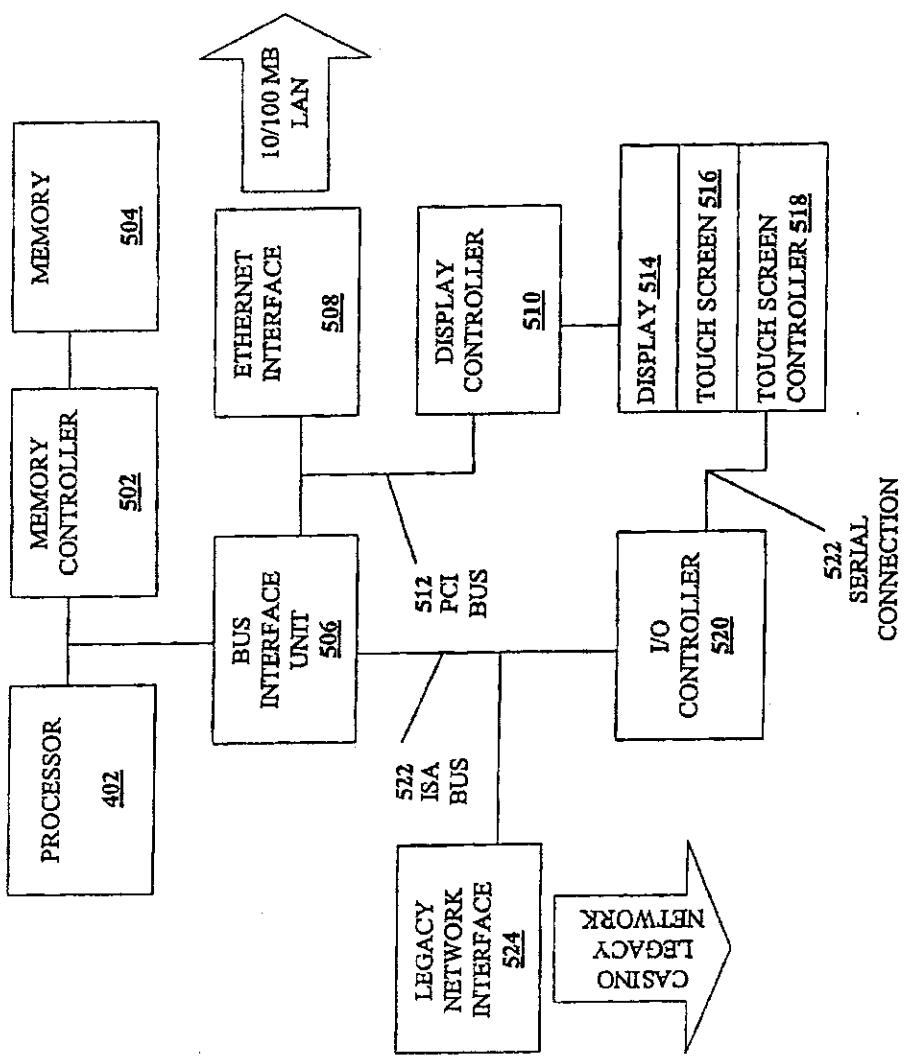
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FIGURE 6



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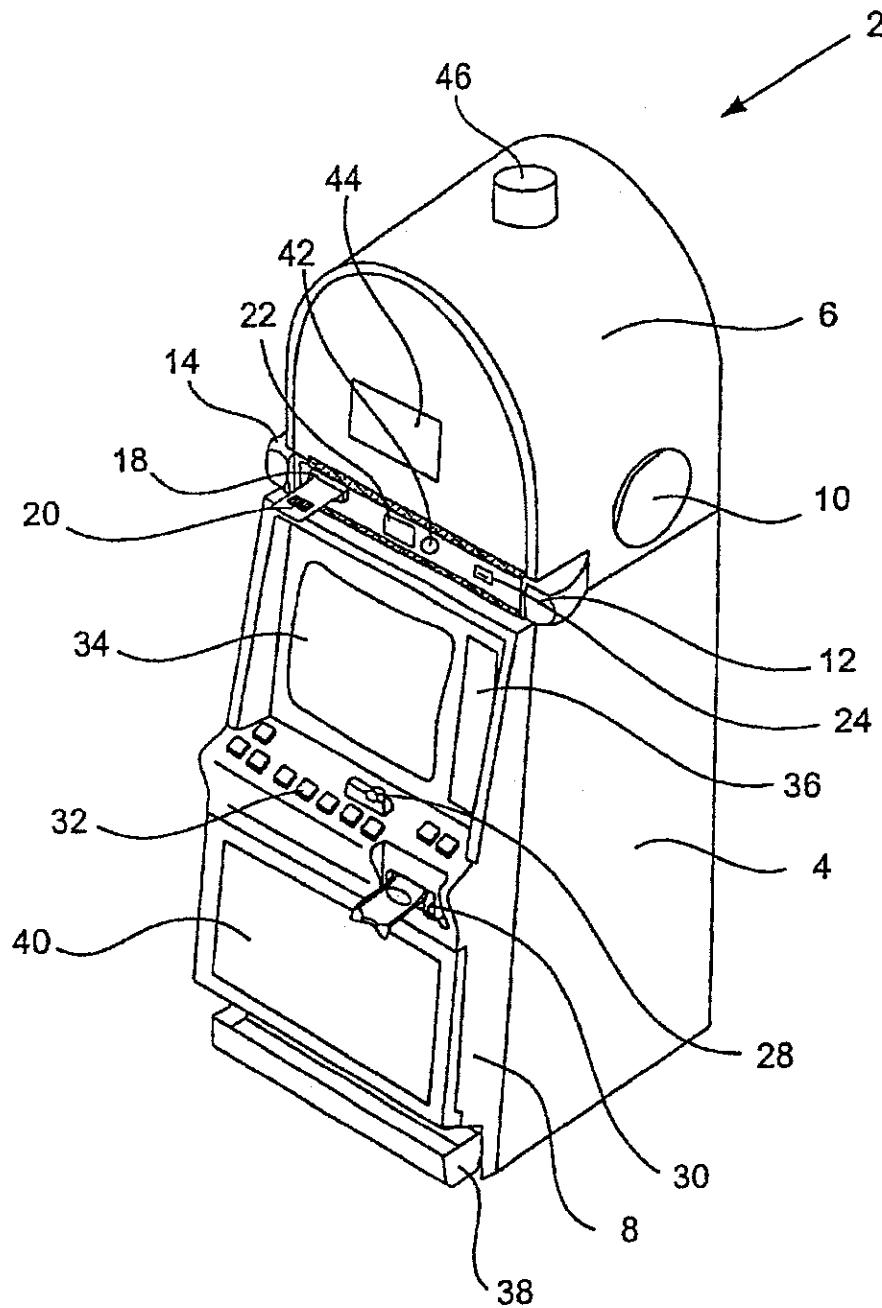


Figure 7

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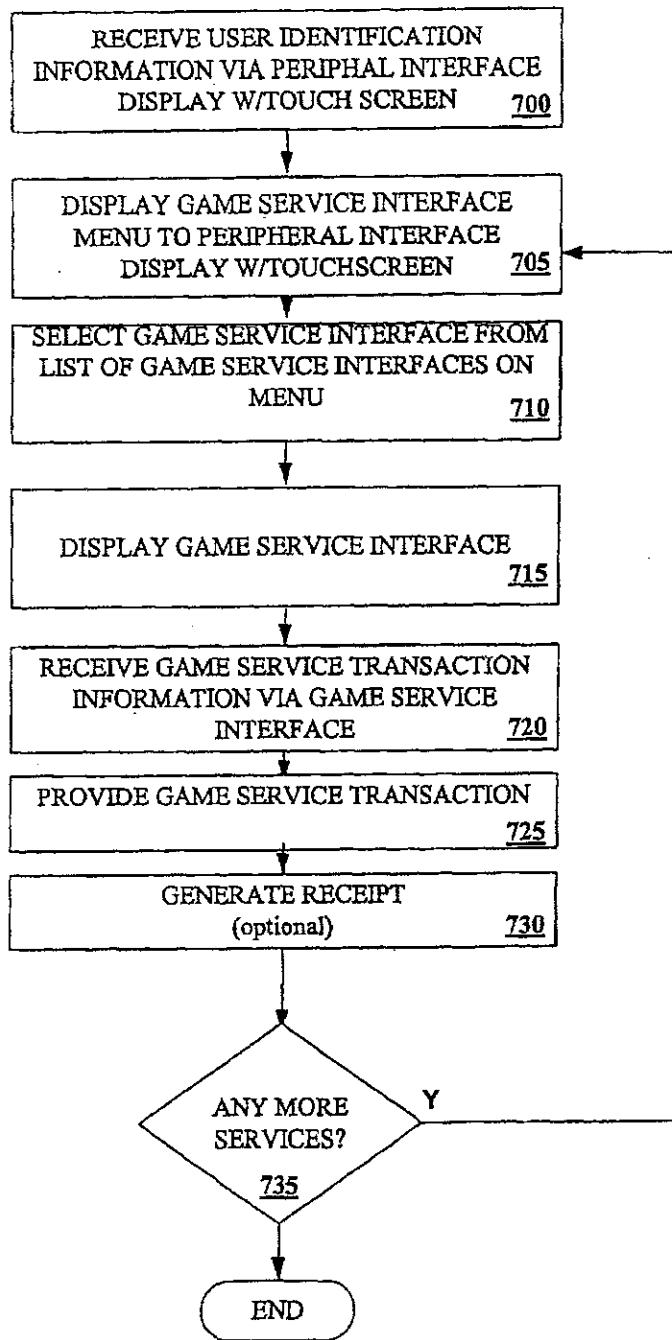


FIGURE 8

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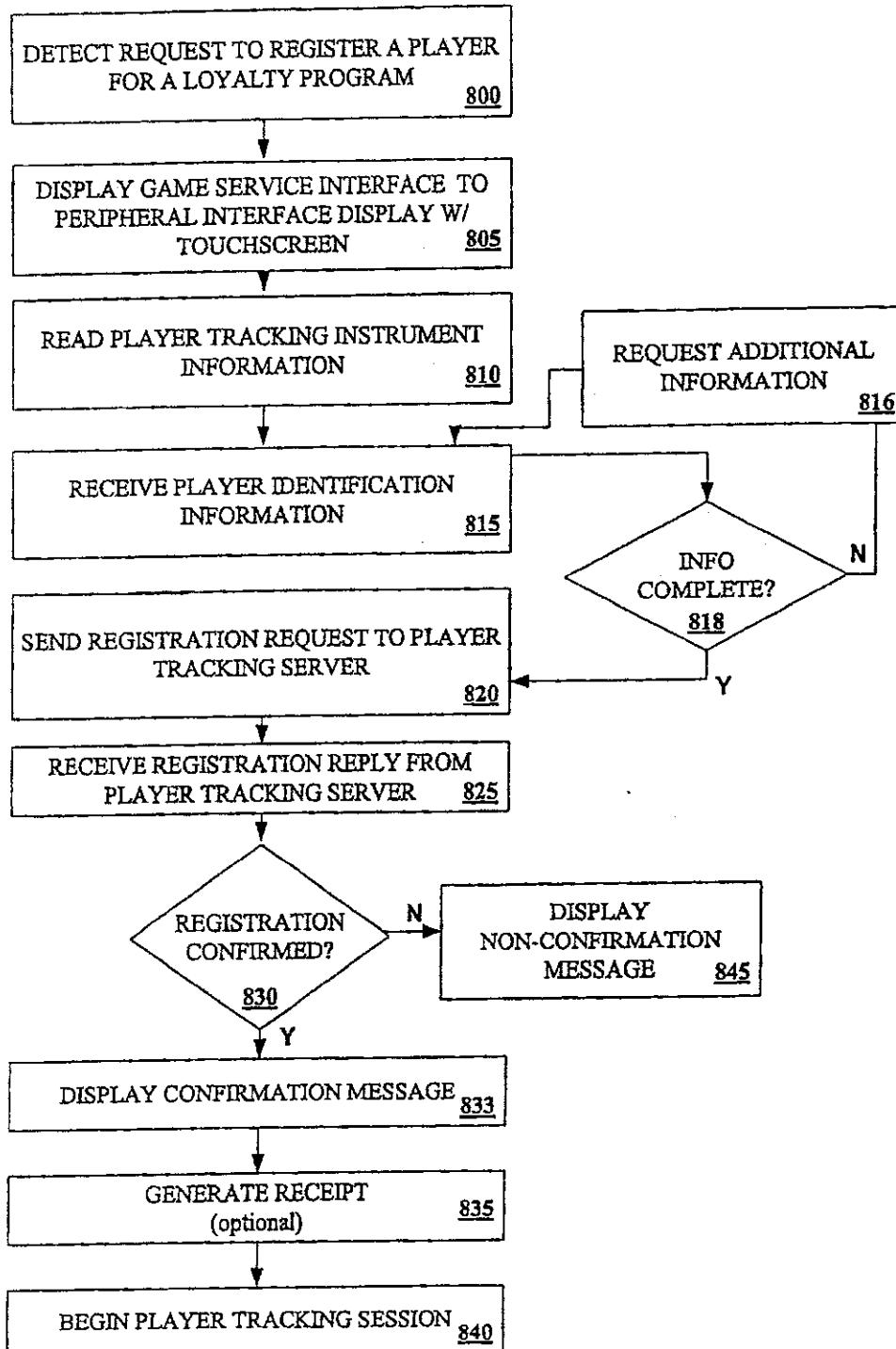


FIGURE 9

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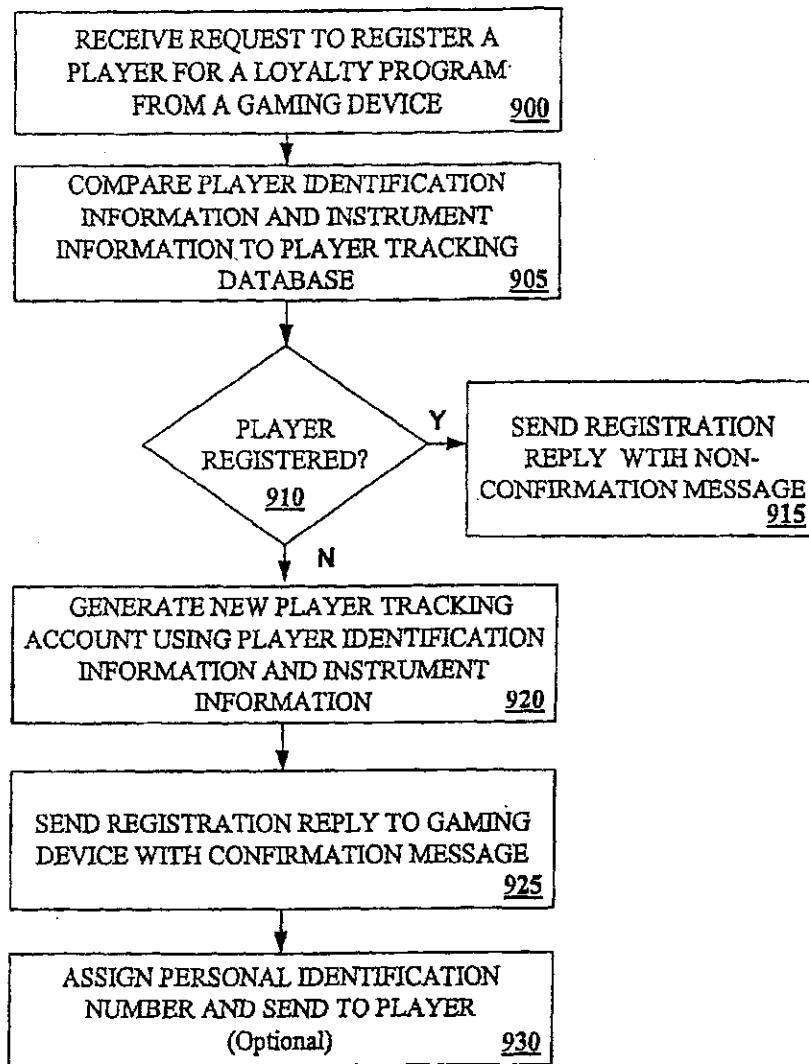


FIGURE 10

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**GAME SERVICE INTERFACES FOR  
PLAYER TRACKING TOUCH SCREEN  
DISPLAY**

**BACKGROUND OF THE INVENTION**

This invention relates to game playing methods for gaming machines such as video slot machines and video poker machines. More particularly, the present invention relates to methods and apparatus for providing player tracking services and related gaming services on a gaming machine.

There are a wide variety of associated devices that can be connected to a gaming machine such as a slot machine or video poker machine. Some examples of these devices are player tracking units, lights, ticket printers, card readers, speakers, bill validators, ticket readers, coin acceptors, display panels, key pads, coin hoppers and button pads. Many of these devices are built into the gaming machine or components associated with the gaming machine such as a top box which usually sits on top of the gaming machine.

Typically, utilizing a master gaming controller, the gaming machine controls various combinations of devices that allow a player to play a game on the gaming machine and also encourage game play on the gaming machine. For example, a game played on a gaming machine usually requires a player to input money or indicia of credit into the gaming machine, indicate a wager amount, and initiate a game play. These steps require the gaming machine to control input devices, including bill validators and coin acceptors, to accept money into the gaming machine and recognize user inputs from devices, such as button pads and levers, to determine the wager amount and initiate game play.

After game play has been initiated, the gaming machine determines a game outcome, presents the game outcome to the player and may dispense an award of some type depending on the outcome of the game. A game outcome presentation may utilize many different visual and audio components such as flashing lights, music, sounds and graphics. The visual and audio components of the game outcome presentation may be used to draw a player's attention to various game features and to heighten the player's interest in additional game play. Maintaining a game player's interest in game play, such as on a gaming machine or during other gaming activities, is an important consideration for an operator of a gaming establishment.

One related method of gaining and maintaining a game player's interest in game play are player tracking programs which are offered at various casinos. Player tracking programs provide rewards to players that typically correspond to the player's level of patronage (e.g., to the player's playing frequency and/or total amount of game plays at a given casino). Player tracking rewards may be free meals, free lodging and/or free entertainment. These rewards may help to sustain a game player's interest in additional game play during a visit to a gaming establishment and may entice a player to visit a gaming establishment to partake in various gaming activities.

In general, player tracking programs may be applied to any game of chance offered at a gaming establishment. In particular, player tracking programs are very popular with players of mechanical slot gaming machines and video slot gaming machines. In a gaming machine, a player tracking program is implemented using a player tracking unit installed in the gaming machine and in communication with a remote player tracking server. Player tracking units are

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usually manufactured as an after-market device separate from the gaming machine. Many different companies manufacture player tracking units as part of player tracking/accounting systems. These player tracking/accounting systems are used in most casinos. Most casinos utilize only one type of player tracking system (i.e. from one manufacturer) while the type of player tracking system varies from casino to casino.

Player tracking cards and player tracking programs are becoming more and more popular. They have become a de facto marketing method of doing business at casinos. The programs allow a casino to identify and reward customers based upon their previous game play history. In particular, a goal of the casinos is to identify and then to provide a higher level of service to certain groups of players identified as especially valuable to the casinos. An incentive of a casino for providing these services is to generate "brand" loyalty, and thus, repeat business from its valued customers. For instance, players that visit the casino, on average, once a week may be deemed as "special" customers and the casino may desire to cultivate a "special" relationship with these customers. In general, the selection of gaming services offered to players via loyalty programs, such as player tracking programs, is increasing. Also, the gaming services offered to a particular player are becoming more focused based upon the desires of a particular player.

In the past, player tracking units have been primarily designed to allow a player to enter a magnetic striped card and possibly enter an identification code using a key pad. Therefore, the player tracking unit interface, which has been designed to perform these tasks, typically includes a key pad, a card reader and a simple display such as an LED. Thus, a disadvantage of current player tracking units is that the player interface is not necessarily suited for providing increasingly complex and diverse gaming services to game players that are customized to an individual player's preferences.

In view of the above, it would be desirable to provide apparatus and methods for a player tracking unit interface that allows a diverse range of gaming services to be offered to a player playing a game on a gaming machine.

**SUMMARY OF THE INVENTION**

This invention addresses the needs indicated above by providing a player tracking unit with a touch screen display with a touch screen controller integrated into the touch screen sensor assembly. Game service interfaces may be presented on the touch screen display that allow a user to obtain one or more game services. The game service interfaces may include buttons with alpha-numeric symbols, function keys and hand-writing recognition capabilities that are recognized using input data from the touch screen sensor. Thus, with the touch screen sensor, a user may navigate through the game service interface and supply gaming information required to obtain a game service. In one embodiment, a registration game service interface is provided with the player tracking unit that allows a player to join a player tracking program at the gaming machine. In another embodiment, a metering game service interface with a calculator is provided that allows a casino operator to obtain and operate on metering information at a gaming machine.

One aspect of the present invention provides a player tracking unit. The player tracking unit may be generally characterized as including: 1) a display; 2) a touch screen mounted over the display; 3) one or more of the following

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player tracking interface devices: a card reader, a bonus button, a microphone, a sound projection device, a camera, a wireless interface device, a proximity sensor, a key pad, a bar-code reader, an illumination device and a finger print reader; 4) a logic device designed or configured; a) to communicate with the display, the touch screen, the one or more player tracking interface devices, a master gaming controller that controls a game played on a gaming machine and a player tracking server and b) to execute gaming logic; and gaming logic for generating a key pad interface on the display and receiving input signals from the touch screen corresponding to input buttons on the key pad interface. The touch screen may include a touch screen sensor, a touch screen assembly enclosing the touch screen sensor; and a touch screen controller integrated into the touch screen assembly. When one of the player tracking devices is an illumination device, the illumination device may be illuminated to signal a casino service representative to register a player to a loyalty program.

In particular embodiments, the touch screen sensor is at least one of a capacitive touch screen sensor, a resistive touch screen sensor and an acoustic wave touch screen sensor. The touch screen may be activated using a finger or a stylus. The display used with the touch screen may be at least one of a LED display, a LCD display, such as a color LCD, a plasma display, a CRT or any other conventional display technology. In one embodiment, the resolution of the display may be 320 pixels by 240 pixels. However, the resolution of the display may be higher or lower than 320 by 240 pixels.

In other embodiments, the input buttons on the key pad interface may be selected from the group consisting of alphabetic symbols, numeric symbols and functional. The input buttons on the key pad interface may be used to input player tracking identification information such as PIN number or may be used to order a drink. The input buttons may be rendered in 3-D, animated, shaded in color and combinations thereof. The alphabetic symbols may be selected from one or more alphabets. The functional symbols may be animated. Further, when one of the player tracking interface devices is a sound projection device and when the input signals for at least one of the input buttons is received, a sound may be emitted from a sound projection device.

The player tracking unit may use many different communication interfaces and communication protocols. For instance, the player tracking unit may include an Ethernet interface used to communicate with remote devices. The logic device on the player tracking unit may communicate with the master gaming controller using at least one of USB, Firewire, RS-232, IrDA and IEEE1394. In addition, the logic device may communicate with master gaming controller using a wireless communication protocol such as Bluetooth, IrDA, IEEE 802.11a, IEEE 802.11b, IEEE 802.11x (e.g., other IEEE 802.11 standards such as IEEE 802.11c, IEEE 802.11d, IEEE 802.11e, etc.), hiperlan/2, and HomeRF. Further, the logic device may be designed or configured to communicate with touch screen using at least one of a USB communication standard, an IEEE 1394 communication standard, a PS/2 communication standard or a Firewire communication standard.

In yet other embodiments, the player unit may include gaming logic for: a) generating a game interface on the display and receiving input signals from the touch screen corresponding to input areas on the game interface where the game interface is used to play a game, b) generating a bonus game interface on the display and receiving input signals from the touch screen corresponding to input areas on the

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bonus game interface where the bonus game interface is used to present a bonus game, c) generating a writing interface on the display and receiving input signals from the touch screen corresponding to game information written on the writing interface and recognizing alpha-numeric characters corresponding to the game information written on the writing interface, d) generating a loyalty program account interface on the display and receiving input signals from the touch screen corresponding to input areas on the loyalty program account interface where the loyalty program account interface is used to view loyalty program account information, e) generating a metering information interface on the display and receiving input signals from the touch screen corresponding to input areas on the metering information interface where the metering information interface is used to view metering information from the gaming machine, f) generating a loyalty program registration interface on the display and receiving input signals from the touch screen corresponding to input areas on the loyalty program registration interface where the loyalty program registration interface is used to register a person in a loyalty program, g) generating an entertainment content interface on the display and receiving input signals from the touch screen corresponding to input areas on the entertainment content interface wherein the entertainment content interface is used to select an entertainment content source to be displayed on the display, h) generating a prize redemption interface on the display and receiving input signals from the touch screen corresponding to input areas on the prize redemption interface where the prize redemption interface is used to redeem, i) generating a calculator interface on the display and receiving input signals from the touch screen corresponding to input areas on the calculator interface where the calculator interface is used to perform arithmetic operations, j) generating a diagnostic interface on the display and receiving input signals from the touch screen corresponding to input areas on the diagnostic interface where the diagnostic interface is used to obtain status information for gaming device on the gaming machine, k) generating a web interface on the display and receiving input signals from the touch screen corresponding to input areas on the web interface wherein the web interface is used to view web pages on the Internet, l) generating a reservation interface on the display and receiving input signals from the touch screen corresponding to input areas on the reservation interface where the reservation interface is used to make a reservations for at least one of food, lodging and entertainment, m) generating a communication interface on the display and receiving input signals from the touch screen corresponding to input areas on the communication interface where the communication interface is used to communicate with another person, n) generating an account interface on the display and receiving input signals from the touch screen corresponding to input buttons on the account interface where the account interface is used to transfer funds to a banking account.

Another aspect of the present invention provides a gaming machine. The gaming machine may be generally characterized as including: i) a master gaming controller designed or configured to control one or more games played on the gaming machine and to execute gaming logic and ii) a player tracking unit. The player tracking unit may be generally characterized as including: 1) a display, 2) a touch screen mounted over the display; 3) one or more of the following player tracking interface devices: a card reader, a bonus button, a microphone, a sound projection device, a camera, a wireless interface device, a proximity sensor, a bar-code reader, an illumination device and a finger print reader; 4) a

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logic device designed or configured; a) to communicate with the display, the touch screen, the one or more player tracking interface devices, a master gaming controller that controls a game played on a gaming machine and a player tracking server and b) to execute gaming logic; and 5) gaming logic for generating a key pad interface on the display and receiving input signals from the touch screen corresponding to input buttons on the key pad interface. The one or more games played on the gaming machine may be selected from but are not limited to the group consisting of video slot games, mechanical slot games, video black jack games, video poker games, video keno games, video pachinko games, video card games, video games of chance and combinations thereof.

In particular embodiments, the master gaming controller may be designed or configured to operate one or more of the player tracking interface devices, the display and the touch screen. In addition, at least one of the logic device and the master gaming controller may be designed or configured to communicate with a portable wireless device such as personal digital assistant. The player tracking unit may send loyalty program information to the portable wireless device and receives loyalty program information from the portable wireless device. The logic device and the master gaming controller may communicate with the portable wireless device using a wireless communication protocol such as Bluetooth, IrDA, IEEE 802.11a, IEEE 802.11b, IEEE 802.11x (e.g. other IEEE 802.11 standards such as IEEE 802.11c, IEEE 802.11d, IEEE 802.11e, etc.), hiperlan/2, and HomeRF. Also, the master gaming controller and the logic device communicate may communicate with each other using a wireless communication protocol such as Bluetooth, IrDA, IEEE 802.11a, IEEE 802.11b, IEEE 802.11x (e.g. other IEEE 802.11 standards such as IEEE 802.11c, IEEE 802.11d, IEEE 802.11e, etc.), hiperlan/2, and HomeRF or a wire communication protocol such as USB, IEEE1394, RS-232 and Firewire.

In particular embodiments, the logic device or the master gaming controller may execute gaming logic for: a) generating a game interface on the display and receiving input signals from the touch screen corresponding to input areas on the game interface where the game interface is used to play a game, b) generating a bonus game interface on the display and receiving input signals from the touch screen corresponding to input areas on the bonus game interface where the bonus game interface is used to present a bonus game, c) generating a writing interface on the display and receiving input signals from the touch screen corresponding to game information written on the writing interface and recognizing alpha-numeric characters corresponding to the game information written on the writing interface, d) generating a loyalty program account interface on the display and receiving input signals from the touch screen corresponding to input areas on the loyalty program account interface where the loyalty program account interface is used to view loyalty program account information, e) generating a metering information interface on the display and receiving input signals from the touch screen corresponding to input areas on the metering information interface where the metering information interface is used to view metering information from the gaming machine, f) generating a loyalty program registration interface on the display and receiving input signals from the touch screen corresponding to input areas on the loyalty program registration interface where the loyalty program registration interface is used to register a person in a loyalty program, g) generating an entertainment content interface on the display and receiving

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input signals from the touch screen corresponding to input areas on the entertainment content interface wherein the entertainment content interface is used to select an entertainment content source to be displayed on the display, h) generating a prize redemption interface on the display and receiving input signals from the touch screen corresponding to input areas on the prize redemption interface where the prize redemption interface is used to redeem, i) generating a calculator interface on the display and receiving input signals from the touch screen corresponding to input areas on the calculator interface where the calculator interface is used to perform arithmetic operations, j) generating a diagnostic interface on the display and receiving input signals from the touch screen corresponding to input areas on the diagnostic interface where the diagnostic interface is used to obtain status information for gaming device on the gaming machine, k) generating a web interface on the display and receiving input signals from the touch screen corresponding to input areas on the web interface wherein the web interface is used to view web pages on the Internet, l) generating a reservation interface on the display and receiving input signals from the touch screen corresponding to input areas on the reservation interface where the reservation interface is used to make a reservations for at least one of food, lodging and entertainment, m) generating a communication interface on the display and receiving input signals from the touch screen corresponding to input areas on the communication interface where the communication interface is used to communicate with another person, n) generating an account interface on the display and receiving input signals from the touch screen corresponding to input buttons on the account interface where the account interface is used to transfer funds to a banking account.

Another aspect of the present invention provides a player tracking system. The player tracking system may be generally characterized as including: 1) a player tracking server, 2) a plurality of gaming machines, and 3) a network designed or configured to allow communication between the plurality of gaming machines and the player tracking server. The gaming machines in the player tracking system may be generally characterized as including a) a master gaming controller designed or configured to control one or more games played on the gaming machine and to execute gaming logic; b) a player tracking unit and c) gaming logic for generating a key pad interface on a display located on the player tracking unit and receiving input signals from a touch screen located on the player tracking unit corresponding to input buttons on the key pad interface. The player tracking units on the gaming machines may be generally characterized as including: i) a display, ii) a touch screen mounted over the display; iii) one or more of the following player tracking interface devices: a card reader, a bonus button, a microphone, a sound projection device, a camera, a wireless interface device, a proximity sensor, a bar-code reader, an illumination device and a finger print reader; iv) a logic device designed or configured to communicate with the display, the touch screen, the one or more player tracking interface devices, a master gaming controller that controls a game played on a gaming machine and a player tracking server and to execute gaming logic.

Another aspect of the present invention provides a method of generating one or more game services on a gaming machine using a touch screen display mounted in a player tracking unit. The method may be generally characterized as including 1) displaying a key pad interface with a plurality of input buttons to the touch screen display; 2) receiving one or more first input signals from a touch screen wherein each

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input signal corresponds to a selection of one of the plurality of input buttons on the key pad interface; 3) displaying a list of game services on the touch screen display; 4) receiving a second input signal from the touch screen that contains information indicating a selected game service from the list of game services; 5) displaying a game service interface with a plurality of input buttons to the touch screen display wherein the input buttons may be used to provide the selected game service; and 6) receiving a plurality of third input signals from the touch screen wherein the plurality of third input signals are used to select input buttons on the game service interface. The game service may be selected but are not to the group consisting of: a) playing a game, b) playing a bonus game, c) registering a player to loyalty program, d) displaying gaming machine metering information, e) performing arithmetic operations, f) making a reservation, g) providing gaming machine diagnostic information, h) displaying loyalty account information, i) redeeming a prize, j) making a food, lodging or entertainment reservation, k) communicating with another person, l) providing a web-based service, m) providing a banking transaction and n) machine diagnostics.

In particular embodiments, the method may also include: a) initiating a loyalty program session, b) detecting an input signal to initiate a loyalty program session, c) validating an identity of a user of the player tracking unit and varying the list of game services according to the identity of the user, d) displaying a hand-writing interface to the touch screen display and receiving written input from the hand-writing interface on the touch screen where the touch screen is activated using a finger or a stylus and e) providing a receipt.

Another aspect of the invention pertains to computer program products including a machine-readable medium on which is stored program instructions for implementing any of the methods described above. Any of the methods of this invention may be represented as program instructions and/or data structures, databases, etc. that can be provided on such computer readable media such as smart card, compact flash memory card, memory stick, RAM, CD-ROM, CD-DVD, hard drive, etc.

These and other features and advantages of the invention will be spelled out in more detail below with reference to the associated drawings.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram of a number of gaming machines with player tracking units connected to servers providing gaming services and player tracking services.

FIGS. 2A-2D are block diagrams of touch screens and displays for some embodiments of the present invention.

FIGS. 3A-3E are block diagram of game service interface displays for some embodiments of the present invention.

FIGS. 4A and 4B are perspective diagrams of player tracking units of the present invention.

FIG. 5 is a block diagram of the components of a player tracking unit of the present invention.

FIG. 6 is a block diagram of processor board with a touch screen display in a player tracking unit for one embodiment of the present invention.

FIG. 7 is a perspective drawing of a video gaming machine of the present invention.

FIG. 8 is a flow chart of a method for providing gaming services on a touch screen display of the present invention.

FIG. 9 is a flow chart of a method for providing a "point of play" loyalty program registration on a gaming machine of the present invention.

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FIG. 10 is a flow chart of a method for providing a "point of play" loyalty program registration on a player tracking server of the present invention.

## DESCRIPTION OF THE PREFERRED EMBODIMENTS

In the present invention as shown in FIG. 1, a touch screen display 16 may be used as an interface to provide player tracking services and to provide other game services to a player playing a game on a gaming machine. More specifically, the touch screen display 16 may be used as an interface by a player to: 1) input player tracking identification information, 2) view account information and perform account transactions for accounts such as player tracking accounts and bank accounts, 3) receive operating instructions related to the player tracking unit and the gaming machine, 4) redeem prizes or comps including using player tracking points to redeem the prize or comp, 5) make entertainment service reservations, 6) transfer credits to cashless instruments and other player accounts, 7) participate in casino promotions, 8) select entertainment choices for output via video and audio output mechanisms on the player tracking unit and the gaming machine, 9) play games and bonus games, 10) request gaming services such as a drink orders, 11) communicate with other players or casino service personnel and 12) register a player for a loyalty program such as a player tracking program. In addition, the touch screen display 16 may be used as an interface by casino service personnel to: a) access diagnostic menus, b) display player tracking unit status information and gaming machine status information, c) access gaming machine metering information and d) display player status information.

In the present invention, to provide the game services described above, game service interfaces are used that may be implemented with the touch screen display 16. Concepts important to many embodiments of this invention include "loyalty points," "loyalty programs," "loyalty point sessions," and "loyalty program instruments." For instance, many of the described game service interfaces are utilized to provide game services associated with a loyalty program.

Loyalty points refers to any type of points accrued for participating in designated activities at a gaming establishment. Establishments where loyalty points may be accrued include casinos, hotels where gaming activities are provided, stores where gaming activities are permitted, Internet-based gaming activities, and the like. Designated activities include, but are not limited to, gaming activities such as playing gaming machines, card games such as black jack, pai Gow poker, baccarat and poker, betting on public event outcomes, table games such as roulette, craps, keno and lotteries, etc. Other patronage activities at gaming establishments may accrue loyalty points. As indicated above, loyalty points represent a form of credit accrued for patronage. The points can be redeemed for a variety of goods or services (or translated to other forms of credit) within a gaming establishment or affiliated establishment. Player tracking points are a typical example of "loyalty points."

The administration and tracking of loyalty points is usually provided in a loyalty program. As described above, the primary goal of a loyalty program is to generate "brand" loyalty for a particular casino or group of casinos. A player tracking program or a slot club are examples of loyalty programs. A participant in a loyalty program may be awarded with "comps" such as free drinks, free meals, free entertainment and other game services according to their level of participation in the loyalty program.

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To participate in a loyalty program, a participant is generally required to join the program. In one embodiment of the present invention, a method is described that allows a player to join a loyalty program at a gaming machine. After joining, the participant is usually presented with a loyalty program instrument. The loyalty program instrument typically contains information that allows a member to accrue loyalty points during designated program activities. For example, for most slot clubs, a player is required to insert a magnetic striped card (i.e. a player tracking card) into the gaming machine before player tracking point points are accrued for the player. Examples of loyalty program instruments include a magnetic striped card, a smart card and a portable wireless device. However, in general, a loyalty program instrument may be any device that carries the information necessary for a player to participate in a loyalty program. For instance, a printed ticket with a bar code, plastic card with a bar code or a room key encoding player tracking information may be used as loyalty program instrument. The bar-coded ticket may be read when inserted into a bill validator on the gaming machine to obtain the necessary player tracking information or from a bar-code scanner located on the gaming machine.

Loyalty point sessions are sessions during which a person is performing the designated activity and during which loyalty points accrue. Loyalty point sessions may be delineated by a first event and a second event. The events are usually dependent on the type of loyalty point instrument employed and the designated loyalty program activity. For instance, in a loyalty program session on a gaming machine where a magnetic-striped player tracking card is used for the loyalty program instrument, the insertion of the card into a card reader on the gaming machine and the removal of the card from the card reader may delineate the beginning and end of the loyalty program session. As another example, in a loyalty program session on a gaming machine where a bar-coded ticket is used for the loyalty program instrument, the insertion of the ticket into a bill-validator and a "cash-out" on the gaming machine may delineate the beginning and end of the loyalty program session.

In FIG. 1, an embodiment of a player tracking system, which may be used as part of loyalty program, is described. In FIGS. 2A-2D, 3A-3E and 4A and 4B, display and touch screen devices (FIGS. 2A-2D), examples of game service interfaces that may be implemented with touch screen devices (FIGS. 3A-3D) and player tracking units incorporating the display and touch screen devices (4A-4D) are described. In FIGS. 5 and 6 block diagrams of player tracking units incorporating the display and touch screen devices of the present invention are described. In FIG. 7, the operation of a gaming machine with the present invention is described. Finally, in FIG. 8, a method of using game service interfaces on the gaming machine is described. In FIG. 9, a method of registering a player for a loyalty program at a gaming machine is described. In FIG. 10, a method, implemented on a player tracking server, of registering a player for loyalty program is described.

Returning to FIG. 1, an example of a player tracking system using an embodiment of the present invention is described. However, the example is presented for illustrated purposes only as the present invention is not limited to the following example. FIG. 1 is a block diagram of a number of gaming machines with player tracking units connected to servers providing player tracking services and servers providing other gaming services. In casino 150, gaming machines 90, 92, 94 and 96 are connected, via the data collection unit (DCU) 60 to the player tracking/accounting

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server 62. The DCU 60, which may be connected to up to 32 player tracking units as part of a local network in a particular example, consolidates the information gathered from player tracking units in gaming machines 90, 92, 94 and 96 and forwards the information to the player tracking account server 62. The player tracking account server is designed 1) to store player tracking account information, such as information regarding a player's previous game play, and 2) to calculate player tracking points based on a player's game play. The player tracking points may be used as basis for providing rewards to the player.

In gaming machine 92 of casino 150, a player tracking unit 56 and slot machine interface board (SMIB) 53 are mounted within a main cabinet 8 of the gaming machine. A top box 130 is mounted on top of the main cabinet 8 of the gaming machine. In many types of gaming machines, the player tracking unit is mounted within the top box 6. The player tracking unit 56 may also be mounted on the side of a gaming machine such as on the side of main cabinet 8. Usually, player tracking units, such as 56, and SMIBs, such as 53, are manufactured as separate units before installation into a gaming machine, such as 92.

The player tracking unit 56 includes three peripheral devices, a card reader 24, a speaker and microphone 58, and the touch screen display 16, all mounted within the unit. In some embodiments of the present invention, the peripheral devices within the player tracking unit are controlled by a processor (see FIG. 5) located within the player tracking unit. In other embodiments, one or more peripheral devices may be directly controlled by the master gaming controller 54. In yet other embodiments, the processor in the player tracking unit 56 may be used as a slave controller by the master gaming controller 54 to operate one or more peripheral devices in the player tracking unit 56. Details of player tracking units with peripheral devices operated by a master gaming controller are described in co-pending U.S. patent application Ser. No. 09/838,033, filed Apr. 19, 2001, by Criss-Puskiewicz, et al, titled "Universal Player Tracking System," which is incorporated herein in its entirety and for all purposes and co-pending U.S. patent application Ser. No. 09/642,192, filed Aug. 18, 2000, by LeMay, et al, titled "Gaming Machine Virtual Player Tracking Services," which is incorporated herein in its entirety and for all purposes.

The player tracking devices are used to input player tracking information that is needed to implement the player tracking program. The player tracking devices may be mounted in many different arrangements depending upon design constraints such as accessibility to the player, packaging constraints of a gaming machine and a configuration of a gaming machine. For instance, the player tracking devices may be mounted flush with a vertical surface in an upright gaming machine and may be mounted flush with a horizontal surface in a table top gaming machine. The player tracking devices may also be externally mounted to the gaming machine cabinet.

In one embodiment, the player tracking unit 56 may communicate with the player tracking server 60 via the SMIB 53, a main communication board 55 and the data collection unit 60. The SMIB 53 allows the player tracking unit 56 to gather metering information from the gaming machine 92 such as an amount a player has wagered during a game play session. This information may be used by the player tracking server to calculate player tracking points for the player. In another embodiment, the master gaming controller 54 may communicate with the player tracking and accounting server via the communication board 55 and the DCU 60 to send metering information to the server 62.

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The player tracking unit 56 is usually connected to the master gaming controller 54 via a serial connection using a wire serial connector and communicates with the master gaming controller 54 using a serial communication protocol. The serial connection between the SMIB 53 and the master gaming controller 54 may be through the main communication board 55 (e.g. through connections 72), through another intermediate device or through a direct connection 70 to the master gaming controller 54. As an example of a serial communication protocol, the master gaming controller 54 may employ a subset of the proprietary Slot Accounting System (SAS protocol) developed by International Game Technology of Reno, Nev. to communicate with the player tracking unit 56.

In some embodiments, proprietary serial connector hardware and proprietary communication protocols may be used for communication between gaming devices within the gaming machine. For instance, Netplex, a proprietary serial communication protocol developed by International Game Technology (IGT, Reno, Nev.), may be used for communication between the peripheral devices, including the speaker/microphone 56, the display w/touch screen 16 and the card reader 24, and a processor on the player tracking unit 56 or communication between the master gaming controller 54 and the peripheral devices. In other embodiments, serial communication between the peripheral devices and a processor on the player tracking unit 56 or the master gaming controller 54 may be provided using non-proprietary industry standard connection hardware and standard communication protocols such as USB, IEEE 1394, Firewire, RS-232, PS/2, IrDA and the like.

In other embodiments of the present invention, serial communication between various gaming devices may be provided using wireless communication hardware and protocols or combinations of wire and wireless communication hardware and communication protocols. For example, the player tracking unit 56 may communicate with the master gaming controller 54 and a local area network connected to the player tracking and accounting server 62 using a wireless communication protocol such as Bluetooth, IrDA, IEEE 802.11a, IEEE 802.11b, IEEE 802.11x (e.g. other IEEE 802.11 standards such as IEEE 802.11c, IEEE 802.11d, IEEE 802.11e, etc.), hiperlan/2, and HomeRF. Thus, a player tracking unit, such as 56, may be installed in gaming machines 90, 92, 94 and 96 without having to wire it to the gaming machine. In other embodiments, the master gaming controller 54 may communicate with a slave processor on the player tracking unit 56 or directly with peripheral devices such as the display with touch screen 16, the card reader 24 and the speaker/microphone 58 using a wireless communication system compatible with wireless communication standards as Bluetooth, IrDA, IEEE 802.11a, IEEE 802.11b, IEEE 802.11x (e.g. other IEEE 802.11 standards such as IEEE 802.11c, IEEE 802.11d, IEEE 802.11e, etc.), hiperlan/2, and HomeRF. In yet another embodiment, the peripheral devices, such as the touch screen display 16, may communicate with a processor on the player tracking unit 56 via a wire communication system such as USB but may also communicate with the master gaming controller 54 via a wireless communication protocol such as Bluetooth, IrDA, IEEE 802.11a, IEEE 802.11b, IEEE 802.11x (e.g. other IEEE 802.11 standards such as IEEE 802.11c, IEEE 802.11d, IEEE 802.11e, etc.), hiperlan/2, and HomeRF.

Typically, when a game player wants to play a game on a gaming machine and utilize the player tracking services available through the player tracking unit, a game player inserts a player tracking card, such as a magnetic striped

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card, into the card reader 24. After the magnetic striped card has been so inserted, the player tracking unit 56 may detect this event and receive certain identification information contained on the card. For example, a player's name, address, and player tracking account number encoded on the magnetic striped card, may be received by the player tracking unit 56. In general, a player must provide identification information of some type to utilize player tracking services available on a gaming machine. For current player tracking programs, the most common approach for providing identification information is to issue a magnetic-striped card storing the necessary identification information to each player that wishes to participate in a given player tracking program. In FIGS. 3E, 9 and 10, a method of allowing a new player without a player tracking card to register for a player tracking program, using a "blank" magnetic striped card or other loyalty program instrument at a gaming machine is described.

After a player has inserted her or his player tracking card into the card reader 24, the player tracking unit 56 may command the touch screen display 16 to display the game player's name on the touch screen display 16 and also, may optionally display a message requesting the game player to validate their identity by entering an identification code using a game service interface with an alpha-numeric key pad displayed on touch screen display 16. The player may use their finger, a stylus or combinations thereof to enter their identification information using the touch screen sensor. Once the game player's identity has been validated, the player tracking information is relayed to the player tracking server 62. Typically, the player tracking server 62 stores player tracking account records including the number of player tracking points previously accumulated by the player.

During game play on the gaming machine, the player tracking unit 56 may poll the master gaming controller 54 for game play information such as how much money the player has wagered on each game, the time when each game was initiated and the location of the gaming machine. The game play information is sent by the player tracking unit 56 to the player tracking server 62. While a player tracking card is inserted in the card reader 24, the player tracking server 62 may use the game play information provided by the player tracking unit 56 to generate player tracking points and add the points to a player tracking account identified by the player tracking card. The player tracking points generated by the player tracking server 62 are stored in a memory of some type on the player tracking server.

To provide additional services to a game player the player tracking unit 56 and/or the master gaming controller may communicate with other remote servers, such as the prize server 64, a reservation server 65, a bonus server (not shown). The servers may reside on a local area network or may reside on remote networks that are accessible to the gaming machine 90 via the Internet. Information from these remote servers may be used to provide gaming services to a player playing a game on the gaming machine 90 using the touch screen display 16 as a peripheral interface device. For example, a prize server, such as 64, may be used to redeem a prize won by the player on the gaming machine, i.e. to have the prize shipped to the player's address. As another example, the reservation server 65 may be used by the player to make a dinner or entertainment reservation using the touch screen display 16. An embodiment of a game service interface for making an entertainment reservation that may be used with the touch screen display 16 is described in more detail with respect to FIG. 3C. An embodiment of a game service interface for redeeming a prize that may be used with

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the touch screen display is described with respect to FIG. 3D. Additional details of providing prizes and prize redemption on a gaming machine are described in co-pending U.S. patent application Ser. No. 09/515,717, filed Feb. 29, 2000 and entitled "Name Your Prize Game Playing Methodology," which is incorporated herein in its entirety and for all purposes.

FIGS. 2A-2D are block diagrams of touch screens and displays for some embodiments of the present invention. In FIG. 2A, two display screens are shown, a narrow display screen 105 and a display screen 110 with a length to height ratio of about 4 to 3. Traditionally, display screens on player tracking units have used LED's to display a single row of alphanumeric text such as a 16 character display resulting in a narrow display such as 105. A touch screen may be used with an LED display screen to eliminate a key pad on the player tracking unit. However, a color LCD display screen may be preferred over an LED screen to allow for the display of symbols as well as alphanumeric characters. In one embodiment of the present invention, a color LCD display screen with a 3.5 inch diagonal and a resolution of 320 pixels by 240 may be used with a touch screen as a touch screen display. In addition to LCD's and LED's, a touch screen may be used with a plasma display screen, a CRT display as well as with other conventional display technology.

In FIGS. 2B-2D, three embodiments of different types of touch screens, a resistive based touch screen (FIG. 2B), a capacitive based touch screen (FIG. 2C) and a surface acoustic wave touch screen (FIG. 2D) are described. In FIG. 2B, an embodiment of a resistive touch screen 111 integrated with a display 110 is shown. In a resistive touch screen 111, a glass panel 120 is coated with a clear conductive material 118. Polyester spacer dots 116 are used to separate a polyester cover sheet 112 from the glass panel 120 with the conductive material coating 118. An inner surface of the polyester cover sheet 120 in contact with the polyester spacer dots 116 is coated with a conductive metal coating 114. An outer surface of the polyester cover sheet may be covered with a scratch resistant coating (not shown). The glass panel 120 and other layers may be integrated into a touch screen assembly that may be mounted over the display 110 using an adhesive epoxy or some other mounting means.

A touch screen controller (not shown) is used to apply a small voltage gradient across the x-axis 111 of the glass panel 120 and across y-axis 113 of the cover sheet 112 which produces a small current in the panel and the cover sheet. With a voltage applied to the glass panel 120 and cover sheet 112, the layers of the resistive touch screen may be used as a sensor. When a stylus or other implement is used to press the conductive layers, 114 and 118, together, the current flowing across the panel 120 and the cover sheet is altered. Based on the change in current, the touch screen controller determines the x and y coordinates of the stylus contact.

In FIG. 2C, an embodiment of a capacitive touch screen 130 integrated with a display 110 is shown. In a capacitive touch screen 130, a glass panel 136 is coated on both sides with a clear conductive material, 134 and 138. The inner conductive layer 138 may be primarily used for shielding. The outer surface of the touch screen may be a scratch resistant coating 132. Electrodes 139 are uniformly distributed around the edge of the touch screen 130 to apply a low-voltage field uniformly across the outer conductive layer 134. When a finger or a conductive stylus contacts the screen 132, a capacitive coupling occurs with voltage field which causes a small current to be drawn into the finger or the stylus. The current flow from the corners of the touch

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screen electrodes 139 are measured. The measured current flow is used by the touch screen controller (not shown) to determine the location of the contact on the screen.

In FIG. 2D, an embodiment of a wave touch screen mounted to a display 110 is shown. The screen 144 is an uncoated glass panel. In one type of wave touch screen, transducers 142 in the corners produce ultrasonic waves on the glass panel. The reflectors 145 are used to create a standing wave pattern on the glass panel 144. When a soft-tipped stylus is touched to the surface of the panel 144, the transducers detect the attenuation of the wave, which may be used by a touch screen controller to determine the coordinates of the stylus. In an infrared touch screen, LED's and photoresistors on the edge of the screen are used to create a grid of infrared beams. A stylus or finger may be used to obstruct the beams and the touch screen controller determines the coordinates of the obstruction.

For most embodiments of the present invention, a capacitive based touch screen is preferred but the present invention is not limited to capacitive based touch screens. Capacitive touch screens are very clear, durable and have a high resolution. However, capacitive touch screen are generally more expensive than resistive touch screens. Further, when a finger is used as a stylus on a capacitive touch screen, a small amount of current is drawn into to the finger which some game players may find annoying. Thus, in some embodiments, other touch screen types, such as a resistive touch screen or a wave touch screen, may be employed with the present invention.

The touch screen controller processes signals from the touch screen sensor and passes touch screen event data to one or more gaming devices that utilize the touch screen event data. For instance, the x and y coordinates of a contact point on the touch screen may be used be a processor on a player tracking unit, a master gaming controller or combinations thereof, to allow a user to navigate through a game service interface (see FIGS. 3A-3D) and to enter gaming information. In general, a logic device in communication with the touch screen, such as the processor on the player tracking unit or the master gaming controller, uses a device driver to receive touch screen event data from the touch screen controller. The touch screen controller may be a component separate from the touch screen assembly. The touch screen assembly includes the layers of the touch screen sensor and is mounted onto a display. In one embodiment of the present invention, the touch screen controller is integrated into the touch screen assembly.

FIGS. 3A-3E are block diagram of game service interfaces for some embodiments of the present invention. In each of the figures, a single "page" of the game service interface that may be displayed on a touch screen display of the present invention is shown. However, the game service interfaces are not limited to a single page. Multiple pages may be used with each game service interface to provide a particular game service. Thus, in some embodiments, to utilize a game service interface to receive a game service, a user may be required to navigate through multiple pages.

A component layout for each game service interface is provided for illustrative purposes only and is not limited to the layout in each of the figures. Thus, layout parameters including but not limited to: 1) types of components (i.e., "buttons" and other input areas) included on each page, 2) a size of buttons on each page, 3) a shape of the button on each page (e.g. square, oval, rectangular, star-shaped, n-sided polygon, etc.), 4) a color scheme for the buttons, 5) alpha-numeric text or symbols on each button and 6) back-

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ground color scheme for the interface, may be varied. The input buttons may be rendered in 2-D. In some embodiments, the layout of pages for a particular game service interface may be customized according to the preferences of an individual player.

In particular embodiments, the buttons may be rendered with surface shading and textures to appear three-dimensional and may be animated. As example of an 3-D animation, when a button is touched on the touch screen, it may appear to move into the screen. Further, the symbols on the buttons may appear to be animated in 2-D or 3-d. For instance, text on the buttons may appear to flash or move or characters and symbols on the buttons may appear to move. The characters and symbols may be selected according to a theme of a game played on the gaming machine. For instance, for a "little green man" game, an animation of a little green man taking a drink may be used to request a drink on the gaming machine.

An audio layout may also be included with each interface. For example, when a player touches a particular button on a game service interface displayed on the touch screen peripheral device or completes a particular task, a corresponding sound may be projected from an audio device located on the player tracking unit or a gaming machine. The sounds may include but are not limited to music, voice messages (e.g., "welcome" or "thank you") and noises (e.g., buzzing or beeping). In some embodiments, the audio layout may be customized according to the preferences of the user. For instance, voice message may be in a language selected by the player.

In FIG. 3A, a metering game service interface 200 that may be displayed on a touch screen display 201 is shown. The metering game service interface allows a casino operator to view metering information on the gaming machine. After logging into the system using metering interface 200 or another interface, the casino operator may use the hopper button 202 to obtain metering information about a hopper on the gaming machine or a printer button 204 to obtain metering information about a printer on the gaming machine that issues printed tickets that may be used to obtain gaming credits on other gaming machines or redeemed for cash. The metering information may be displayed on the display area 216. The casino operator may use calculator buttons 208, 210, 212, 214 to perform arithmetic operations on the metering data. For example, "back" button 208 and "enter" button 210 may be used to enter data. The arithmetic function buttons 212 and numeric buttons 214 may be used to perform various arithmetic operations. The interface 200 may also include gaming specific function keys. For instance, the function keys 206 may allow the user to convert the metering information to different gaming machine denominations such as a nickel, quarter or dollar machine.

In FIG. 3B, a credit game service 225 that may be displayed on the touch screen display is shown. The credit interface 225 may be used by a player to transfer credits and cash winnings to various accounts accessible to the player. For instance, a player may be able to transfer a portion of their credits or cash to a smart card, a printed ticket or a bank account using the card button 220, the ticket button 222 or the bank button 224. The numeric buttons 214 may be used to enter account information and PIN numbers as well as to perform arithmetic operations. The function keys 226 may be used for currency conversion such as between dollars, pounds and yen. To transfer money to bank account, the player tracking unit or the gaming machine may communicate with the bank via a network connection available to the

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player tracking unit or gaming machine as described with respect to FIG. 1.

In FIG. 3C, a reservation interface 230 that may be displayed on the touch screen display is shown. The reservation interface may be used by the player to make reservations for food and entertainment at a gaming establishment such as a casino. When the entertainment button 236 or the restaurant button 236 is pressed, different selections in each category may be displayed. When the restaurant button 236 is pressed, three restaurant selections 238 are displayed. When the info button 232 is pressed, information about the entertainment selections or restaurant selections may be displayed in display area 216. For example, the info button 232 may be used to determine one of the restaurant selections serves "Asian Cuisine." Using the date button 242, date selection buttons 244, time button 246 and time selection buttons, a player may select a time and date for a reservation. Then, when the reserve button 240 is pressed, a request for a reservation may be sent to a remote reservation server 65 or another remote device as described with reference to FIG. 1. When the reservation has been confirmed by the remote server, a confirmation message may be displayed on the reservation interface. In some embodiments, when the gaming machine includes a printer, a printed receipt with the reservation may be issued to the player.

The reservation interface 230 as well as other game service interfaces described herein may be not available to all players using the touch screen interface. For example, in some embodiments, only players with a special "status" according to criteria determined by the gaming establishment may be able to access a particular game service interface. For instance, after a certain amount of game play by the player, the player may be presented access to the reservation interface 230 to obtain a free dinner or a show as compensation (e.g. comp) for the amount of their game play.

In FIG. 3D, a prize game service interface 225 that may be displayed on a touch screen peripheral device is shown. The prize interface may be used by the player to make redeem prizes awarded on a gaming machine. For instance, prizes may be awarded as: 1) a "jack pot" on a gaming machine, 2) based upon game play history that is tracked as part of a loyalty program or 3) part of a promotion at the gaming establishment. The prize buttons 258 may be pressed to select one of the prizes. When the info button 232 is pressed, information about the prize selection may be displayed in display area 216. Using the credits button 252, points button 254 and EFT (electronic funds transfer) button, a player may use a combination of credits available on the gaming machine, loyalty points and cash from a bank account to redeem a particular prize. The player may use an additional page of the prize redemption interface 250 to enter additional information such as a shipping address.

In FIG. 3E, a loyalty program registration interface 260 that may be displayed on a touch screen peripheral device is shown of the present invention. Using the loyalty program registration interface 260, a player that is not a member of a loyalty program, such as player tracking program, may use the interface 260 to join the program at the gaming machine as part of a "point of play" registration. In one embodiment, the player may obtain a "blank" magnetic striped card or another type of loyalty program instrument excepted by the card reader on the gaming machine such as a smart card. Next at the gaming machine, the player may request a "point of play" registration on the gaming machine from a menu of game services available on the gaming machine. A "point of play" registration on the gaming machine may be initiated before game play session has begun on the gaming machine

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(e.g. the player registers and then plays one or more games on the gaming machine), during a game play session on the gaming machine (e.g. game play by the player occurs prior to the registration and after the registration) and at the end of a game play session (e.g. the player registers but does not continue to play).

After the "point of play" registration has been initiated on the gaming machine, a logic device on the player tracking unit or the gaming machine may instruct the player to insert the "blank" magnetic striped card into the card reader and display the loyalty program registration interface 260 on the touch screen display. Using a finger or stylus, a player may enter their name, address and other identification information required for registration. Different combinations of registration information may be used and are not limited to a name and address. The required identification information may be entered using the numeric input buttons 214 and the alphabetic input buttons 266. The required information may be input in different languages and is not limited to English or other Romance languages. Thus, the input buttons 266 may be adapted for languages using alphabets other than a Roman alphabet.

In some embodiments, the touch screen display may be used with hand writing recognition software located on a logic device on the player tracking unit, player tracking server or the gaming machine to allow a player to write information on the display screen, such as their name and address, as a means of inputting this information. The "written" information may be converted to text by the hand-writing recognition software and stored electronically. For example, a player name, "JOE" 264 is written in a writing template area 262. The name may be recognized using hand-writing recognition software and converted to text. The required registration information may be written in languages other than English and using an alphabet different than the Roman alphabet such as a Kanji alphabet which is used in Japan.

In addition, the player may sign their name in the writing template area 262. The player's signature may be recorded and stored so that it may be later used for identification purposes. For example, prior to the initiation of a player tracking session or another game service, a signature recorded from the writing template area 262 may be compared with a stored signature using comparison software. When the signatures compare, the player tracking session or other game service is allowed to proceed. When the signatures do not compare, the player tracking session or game service may be terminated or additional identification information may be required from the player before the player tracking session is allowed. Alphabetic input buttons and writing template areas with hand writing recognition and feature recognition software are not limited to the loyalty program registration interface 260 and may be used with any of the other game service interfaces of the present invention.

Besides a signature, other biometric information may be recorded from the player as part of the registration process. For instance, a camera may be used to record a picture of player's face or perform a retinal scan of a player's retina. As another example, a finger print reader may be used to record a player's finger print. A microphone may be used to record a player's voice. In one embodiment, the biometric information may be used for auditing purposes to identify that a player has actually registered. In another embodiment, the biometric information entered during the registration process may be used to validate a player's identity to initiate a loyalty program session. For instance, a recorded player's finger print may be used to validate the player's identity

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when they initiate a loyalty program session using a loyalty program instrument. The biometric input devices used in the registration process, such as a camera, finger print reader, a microphone may be located on a player tracking unit, a gaming machine, a casino kiosk or any other gaming device used to register a player.

After the player has entered the required information using the game service interface, the player may touch the register button 268 and a registration request message is sent to the player tracking service. The registration request message contains at least the identification information entered by the player and identification information from the loyalty point instrument used in the registration process such as a serial number recorded from the magnetic striped card or other identification information recorded on the loyalty point instrument. The registration request message may be generated by a logic device located in the player tracking unit or in the gaming machine such as the master gaming controller. After receiving a confirmation of the registration from the player tracking server, any additional game play on the gaming machine by the player may be recorded on the gaming machine and sent to the player tracking server as part of a player tracking session. In one embodiment, the gaming machine may issue a printed receipt to the player to confirm the registration process.

After registration, the magnetic striped card, or other loyalty point instrument used in the registration process, may be used by the player to initiate a player tracking session on other gaming machines or participate in other loyalty program activities available to the player through the loyal program using the magnetic striped card. Additional details of the point of play registration method of the present invention are described with respect to FIGS. 9 and 10.

The "point of play" registration method, described above, is not limited to touch screen displays located on a player tracking unit. The method may be implemented on a touch screen display used as the main display on the gaming machine or as a secondary display on the gaming machine. In addition, the method may be implemented on a touch screen display located on a casino kiosk. The casino kiosk may include a card reader and baskets containing blank magnetic striped cards or other gaming devices used as a loyalty program instruments. For instance, a smart card or a room key may be used as loyalty program instruments. At the kiosk, the player may use the blank magnetic striped cards and the touch screen display interface to register for a loyalty program such as a player tracking program as described above with respect to the gaming machine.

The "point of play" registration may also be implemented using many different input mechanisms or combinations of input mechanisms to enter a required set of registration information for a loyalty program. The input mechanisms may be located on a gaming machine or other gaming devices (e.g. casino kiosks and hand-held wireless devices) used to perform a "point of play" registration. For instance, a user may enter some of the registration information using a microphone and voice recognition software. In another examples, a user may enter registration information using alpha-numeric characters displayed on a display screen and a selection mechanism on the gaming machine to select the characters on the display screen. The selection mechanism may be one or more of the following but is not limited to input buttons, a joystick, a track-ball and a mouse.

In yet another embodiment of the present invention, the point of play registration may be initiated by a casino service representative. When a player is playing a game on the

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gaming machine and has not initiated a player tracking session, a light, the touch screen display (e.g., change color) or some other interface device (see FIGS. 4A and 4B) on the player tracking unit may indicate that the player may be a valuable to the casino as a member of their loyalty program such as their player tracking program. For example, when the player has bet an amount of money over some amount of time determined by the casino, the light on the player tracking unit may be activated. A passing casino service representative may notice the light and inquire whether the player would like to enroll in a player tracking program. The casino service representative enter the player's registration information on touch screen display located on a hand-held wireless device carried by the casino service representative and obtain card information from a card reader attached to the hand-held device. The hand-held wireless device may communicate with player tracking unit using a wireless communication standard such as but not limited to Bluetooth, IrDA (Infrared Direct Access), IEEE 802.11a, IEEE 802.11b, IEEE 802.11x, hiperlan/2, and HomeRF. After entering the required information, a registration request message may be sent through a wire interface or a wireless interface on the player tracking unit to the player tracking server (see FIGS. 4B), through a wireless interface on the gaming machine to the player tracking server or directly to the player tracking server from the hand held-device. After receiving a registration confirmation from the player tracking server, the player may be presented with an activated player tracking card which may be used to initiate a player tracking session on the gaming machine. An example of hand-held wireless device that may be used to provide the "point of play" player tracking registration is described in co-pending U.S. application Ser. No. 09/544, 844, by Rowe, filed Apr. 7, 2000, titled "Wireless Gaming Environment," which is incorporated herein in its entirety and for all purposes.

IrDA is a standard for devices to communicate using infrared light pulses. A hand-held device, such as a PDA (personal digital assistant) may communicate with the player tracking unit and the gaming machine using infrared light pulses using the IrDA communication standard or some other infrared communication standard. Generally, infrared communication using IrDA requires line of sight communications.

The game service interfaces described above have been presented for illustrative purposes only as many other types of game service interfaces may be used with the touch screen displays of the present invention. For example, game service interfaces may be used that allow a player to specify various game playing preferences. Additional details of these interfaces, which may be used in the present invention, are described in co-pending U.S. patent application Ser. No. 09/819,152, by Paulsen, filed Mar. 27, 2001, titled "Interactive Game Playing Preferences", which is incorporated herein in its entirety and for all purposes. As another example, a player may use the touch screen display and a game service interface to select different entertainment content sources, such as video programs, audio programs and Internet based services. The display screen may be used to display entertainment content such as a movie, a sporting event, advertising and other promotions. For Internet based services, the display with a touch screen may be used to operate a web-browser and other web-based applications. A few examples of entertainment content sources and interfaces, including Internet-based entertainment content sources, that may be provided with the touch screen display of the present invention are described in co-pending U.S.

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patent application Ser. No. 09/665,526, by Nelson, et al, filed on Sep. 9, 2000, and titled "Play Per View," which is incorporated herein in its entirety and for all purposes. In yet another example, a player may use a game service interface to select promotions available to the player and receive a printed coupon used to obtain the promotion.

FIGS. 4A and 4B are perspective diagrams of different embodiments of player tracking units of the present invention. FIG. 4A is a front diagram for a housing or chassis 300 enclosing a number of interface peripherals. The interface peripherals may be used to provide input and output (I/O) to a player tracking system or may be used to provide I/O to other gaming systems such as a gaming machine. The device housing 300 may enclose a logic device (see FIG. 5) and other electronics configured to execute player tracking functions or the logic device may be enclosed in a logic device housing separate from the device housing 300.

Using the player tracking interface devices enclosed in the housing 300, gaming information, such as player tracking information, may be input to the player tracking unit and gaming information may be visually and aurally communicated to various individuals that may use the player tracking unit, such as game players, casino service representatives and maintenance technicians. The device housing 300 encloses a touch screen display 315, a key pad 320, a speaker/microphone 36, a card reader 325, a light 311 adjacent to the card reader 325 and a light 316 adjacent to the touch screen display 315. In other embodiments, the housing 300 may enclose many different combinations of player tracking interface devices. For instance, additional gaming devices, such as biometric input devices (e.g., cameras, retinal scanners, finger print readers), wireless interface devices cameras and bonus buttons, may also be enclosed in the device housing (see FIG. 4B). In one embodiment, face plate 330 surrounds the display 315, the key pad 320, the card reader 325, the light 316, the light 311 and the speaker 36. The face plate 330 may include mounting holes, such as 312, for mounting various player tracking interface devices to the face plate 330 such as the touch screen display 315.

The face plate 330 includes cut-outs (not shown) that may allow access to the player tracking interface devices. For instance, a front portion of the light 316, a front portion of the touch screen display 315, and a front portion of the key pad are visible through the face plate 330. Each of the key pad buttons, such as 321, 322 and 323, may be back-lit by illumination devices of some type. The illumination devices, behind the key pad buttons, may be independently controlled to display various light and color patterns. The light and color patterns may be used to represent game information.

The dimensions of the device housing 300, (e.g. 305, 308 and 310) are shown in FIGS. 2A and 2C. The device housing 300 is shown as a rectangular box for illustrative purposes only. A shape of the device housing 300 is variable and is not strictly limited to rectangular shapes. Further, dimensions of the cut-outs on the face plate 330 for the player tracking interface devices may vary depending the manufacturer of a particular interface peripheral device which may be used as a player tracking device. Typically, the dimensions of player tracking interface devices vary from manufacturer to manufacturer.

The light 316, adjacent to the touch screen display 315 may use one or more illumination devices. Further, the light 316 may employ one or more types of lighting systems such as light emitting diodes (LED's), neon bulbs, incandescent

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bulbs, halogen bulbs, fluorescent bulbs, electro-luminescent lighting elements or combination thereof. In a particular embodiment, the LED's may be multi-colored LED's. The light may extend substantially surround the touch screen display 315 or the light may extend around a portion of the perimeter of the touch screen display. Illumination devices within light 316 may be used to indicate different types of gaming information. For instance, the light 316 may be used to indicate a player has inserted their card incorrectly into the card reader 325. The light 316 may be activated to signal a passing casino service representative to initiate a "point of play registration," as described with reference to FIG. 3E.

The touch screen display 315 may be an LCD, vacuum fluorescent, plasma display screen or any other type of display technology. The touch screen display 315 may employ one of the touch screen sensors, preferably but not limited to a capacitive sensor, with a touch screen controller integrated into the touch screen assembly as described with reference to FIGS. 2A-2D. The touch screen display 315 may be used to display additional symbols or gaming information that may be used to enhance player tracking services and other related gaming services. For instance, a drink button 322 is used on the key pad 320 for a player to request a drink. Additional drink symbols or text names may be displayed on the touch screen display 315 to allow a player to select a particular type of drink.

Portions of the touch screen display 315 may be used to convey gaming information in a manner similar to the illumination devices. For instance, one or more portions the touch screen display 315, such as a rectangular border around the perimeter of the touch screen display, may flash with various color patterns and symbols as part of an attract mode. Further, one or more portions of the touch screen display may be used to signal machine events. For example, when a player tracking card is inserted correctly in the card reader 325, a portion or all of the touch screen display 315 may light up as green. When a player tracking card is inserted incorrectly in the card reader 325, a portion of the display may light up and flash red. As another example, when a machine malfunction has occurred, a portion of the touch screen display or all of the touch screen display 315 may light up in red. Details of other gaming information (e.g., machine events) which may be provided by illumination devices that may be also may be used with a touch screen display are described in co-pending U.S. application Ser. No. 09/921489, by Hedrick, et al., filed on Aug. 3, 2001, entitled "Player Tracking Communication Means in a Gaming Machine," which is incorporated herein in its entirety and for all purposes.

FIG. 4B is a front diagram for a housing or chassis 300 enclosing a number of interface peripherals which may be used as player tracking interface devices, for one embodiment of the present invention. The front plate 330 is covered with a decorative skin 365 with a silk-screen logo 366. In addition to the peripheral interface devices described with respect to FIG. 4A, the player tracking housing 300 includes a wireless interface 364, a camera 362 and a finger-print reader with platen 360. The wireless interface 364 may be compatible with one or more wireless communication standards including but not limited to Bluetooth, IrDA, IEEE 802.11a, IEEE 802.11b, IEEE 802.11x, hiperlan/2, and HomeRF.

In one embodiment, the touch screen display 315 is a color LCD. The touch screen display 315 may be used to implement a game service interface as described with respect to FIGS. 3A-3E. In addition, the touch screen display 315 is used to replace the key pad 320. More

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specifically, the touch screen display may be used as an interface by a player to: 1) input player tracking identification information, 2) view account information and perform account transactions for accounts such as player tracking accounts and bank accounts, 3) receive operating instructions related to the player tracking unit and the gaming machine, 4) redeem prizes or comps including using player tracking points to redeem the prize or comp (see FIG. 3D), 5) make entertainment service reservations (see FIG. 3C), 6) transfer credits to cashless instruments and other player accounts (see FIG. 3B), 7) participate in casino promotions, 8) select entertainment choices for output via video and audio output mechanisms on the player tracking unit and the gaming machine, 9) play games and bonus games, 10) request gaming services such as a drink orders, 11) communicate with other players or casino service personnel, 12) play progressive games, 13) register a player for a loyalty program such as a player tracking club (see FIG. 3E), 14) perform banking transactions and 15) obtain machine diagnostics. In addition, the touch screen display 315 may be used as an interface by casino service personnel to: a) access diagnostic menus, b) display player tracking unit status information and gaming machine status information, c) access gaming machine metering information (see FIG. 3A) and d) display player status information.

The camera 362 may be used for security purposes, promotional purposes and to enter biometric information. For instance, the camera 362 may deter tampering with a player tracking unit or gaming machine. As another example, a picture of a player may be recorded when they win a jackpot and used for a promotion. As another example, the camera may be used with feature recognition software to identify the player. Similarly, the finger-print reader 360 may be used to read a player's fingerprint which is used to determine their identity. As another example, the microphone 56 may be used with voice recognition software to recognize a player's voice for player authentication purposes. Thus, a voice signal input into the microphone may be compared with a stored voice print to identify the player. In some embodiments, biometric input devices may be used to supplement information read from a card inserted in the card reader or to even replace the card reader 325.

Biometric information input using the camera 362, finger-print reader 360 or microphone may also be used as part of the "point of play" registration method. For instance, when a player attempts to register for a loyalty program such as a player tracking program at the gaming machine, a picture of the player or a retinal scan may be taken by the camera or a finger print may be recorded using the finger print reader 360. The information maybe used for future identification of the player or for security purposes.

The wireless interface 364 may be used to communicate with a portable wireless device worn or carried by a player, a casino service representative or maintenance technician. For example, rather than inserting a card into the card reader 325, a player may wear or simply carry a wireless communication device that may be about the size of a player tracking card. When the player is near the machine, a wireless interface device 364 and the wireless device worn by the player may automatically detect each other and establish communications. The communication connection allows gaming information to be transferred between the wireless devices. As another example, the wireless interface 364 may be used to communicate with a wireless device carried by a casino service representative such as a hand-held device used for a "point of play" registration of a game player at the gaming machine.

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The wireless interface device 364 may use a wireless communication standard such as Bluetooth™ to communicate with portable wireless devices using this standard. The Bluetooth communicates on a frequency of 2.45 Gigahertz. Typically, Bluetooth devices send out signals in the range of 1 milliwatt. The signal strength limits the range of the devices to about 10 meters and also limits potential interference sources. Interference is also limited by using spread-spectrum frequency hopping. For instance, a device may use 79 or more randomly chosen frequencies within a designated range that change on a regular basis up to 1,600 times a second. Thus, even if interference occurs, it is likely only to occur for a short period of time.

When Bluetooth-capable devices come within range of one another, an electronic conversation takes place to determine whether they have data share or whether one needs to control the other. The connection process is performed automatically. Once a conversation between the devices has occurred, the devices form a network. Bluetooth systems create a Personal-Area Networks (PAN) or "piconets". While the two or more devices in a piconet remain in range of one another, the distances between the communications devices may vary as the wireless devices are moved about. Once a piconet is established, such as between the wireless interface device 364 and a portable wireless device, the members of the piconet randomly hop frequencies in unison so they remain in touch with another and avoid other piconets that may be operating in proximity to the established piconet. When Bluetooth is applied in a casino environment, many such piconets may be operating simultaneously. Details of the Bluetooth™ standard and the Bluetooth™ special interest group may be found at [www.bluetooth.com](http://www.bluetooth.com). Other wireless standards that may be used with the present invention include but are not limited to IrDA, IEEE 802.11a, IEEE 802.11b, IEEE 802.11x (e.g. other IEEE 802.11 standards such as IEEE 802.11c, IEEE 802.11d, IEEE 802.11e, etc.), hiperlan/2, and HomeRF.

In another embodiment of the present invention, the microphone and speaker 56 may be used to input gaming information and aurally communicate gaming information. For instance, the microphone 56 may be used with voice recognition software executed by: a) a logic device on the player tracking unit or b) a master gaming controller in a gaming machine, may be used recognize verbal requests for gaming services. For instance, the player may request a drink by saying "order me a drink" into the microphone.

The speaker 56 may be used to aurally communicate gaming information to the player or someone else using the gaming machine. For instance, when a card has been inserted incorrectly in the card reader 325. A message, such as "card not inserted correctly," may be projected from the speaker. Simultaneously, although not required, the light 316 may flash red to draw the player's attention. As another example, as part of a "point of play" registration, a player may be able to speak their name, address and other required information into the microphone 56. The voice information from the player may be used to request a player tracking program registration from a player tracking server as described with respect to FIGS. 3E. The voice recognition software may be used in combination with the touch screen display. For example, information entered by the player from speaking may be converted to text and then may be displayed on the touch screen display 315. A game service interface on the touch screen display 315 may be used to correct errors in text converted from a player's voice input.

Voice messages from the speaker 56 may be projected in different languages. For example, for a Japanese speaking

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game player messages may be in Japanese, for a Spanish speaking game player the messages may be in Spanish while for an English speaking player the messages may be in English. The language preferred by the player may be stored as player tracking information on a player tracking card or the player may be able to specify their language using one of the input devices on the player tracking unit. The player tracking information on the player tracking card may be based on a user profile previously established by the player which may be used to select the language used by the player.

FIG. 5 is a block diagram of an embodiment of a player tracking unit 300 of the present invention connected to a master gaming controller 54 (see FIG. 1) on a gaming machine and a player tracking server 62. The player tracking unit 300 includes a logic device 410 and a number of player tracking interface devices 411 including a card reader 325, a display 315, a touch screen 416, a light panel 316, a speaker/microphone 56, a wireless interface and other player tracking interface devices 456.

The logic device 410 may include a processor for executing software allowing the player tracking unit to perform various player tracking functions such as communicating with the player tracking server 62, communicating with the master gaming controller 54 or operating the various peripheral devices such as the card reader 325, the display 315, the touch screen and the light panel 316. For instance, the logic device 410 may send messages containing player tracking information or game service interfaces to the display 315 and may receive input invents from the touch screen 416. As another example, the logic device 410 may send commands to the light panel 316 to display a particular light pattern and to the speaker/microphone 56 to project a sound to visually and aurally convey game information. The logic device 410 may utilize a microprocessor and/or microcontrollers. For instance, the light panel 316 may include a microcontroller that converts signals from the processor 402 to voltage levels for one or more illumination devices. In one embodiment, application software for the player tracking unit 300 and configuration information for the player tracking unit may be stored in a memory device such as an EPROM 408, a non-volatile memory, hard drive or a flash memory.

The player tracking unit may include a memory 416 configured to store: 1) player tracking software 414 such as data collection software, 2) player tracking communication protocols (e.g. 420) allowing the player tracking unit 300 to communicate with different types of player tracking servers, 3) device drivers for many types of player tracking interface devices (e.g. to communicate with the touch screen controller), 4) voice recognition software for receiving voice commands from the microphone 56, 5) software for displaying different game service interfaces, 6) software for generating a "point of play" registration request and 7) industry standard communication protocols (e.g. 440) such as TCP/IP, USB, Firewire, IEEE1394, IrDA or Bluetooth allowing the player tracking unit to communicate with devices using these protocols and proprietary communication standards such as Netplex and SAS (IGT, Reno, Nev.) allowing the player tracking unit to communicate with devices using these protocols. Typically, the master gaming controller, such as 54, communicates using a serial communication protocol. A few examples of serial communication protocols that may be used to communicate with the master gaming controller include but are not limited to USB, RS-232 and Netplex (a proprietary protocol developed by IGT, Reno, Nev.).

A plurality of device drivers may be stored in memory 316 for each type of player tracking device. For example, device

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drivers for five different types of card readers, six different types of displays and eight different types of touch screens may be stored in the memory 416. When one type of a particular peripheral device is exchanged for another type of the particular device, a new device driver may be loaded from the memory 416 by the processor 402 to allow communication with the device. For instance, one type of card reader in the player tracking unit 300 maybe replaced with a second type of card reader where device drivers for both card readers are stored in the memory 416.

In some embodiments, the software units stored in the memory 416 may be upgraded as needed. For instance, when the memory 416 is a hard drive, new device drivers or new communication protocols may be uploaded to the memory from the master gaming controller 54, the player tracking server 62 or from some other external device. As another example, when the memory 416 is a CD/DVD drive containing a CD/DVD designed or configured to store the player tracking software 414, the device drivers and other communication protocols, the software stored in the memory may be upgraded by replacing a first CD/DVD with a second CD/DVD. In yet another example, when the memory 416 uses one or more flash memory units designed or configured to store the player tracking software 414, the device drivers and other communication protocols, the software stored in the flash memory units may be upgraded by replacing one or more flash memory units with new flash memory units storing the upgraded software.

A minimal set of player tracking software applications 414, communication protocols 440, player tracking communication protocols and device drivers may be stored on in the memory 416. For instance, an operating system, a communication protocol allowing the player tracking unit 300 to communicate with a remote server such as the player tracking server 62 and one or more common player tracking applications may be stored in memory 416. When the player tracking unit is powered-up, the player tracking unit 300 may contact a remote server 62 and download specific player tracking software from the remote software. The downloaded software may include but is not limited to one or more particular player tracking applications that are supported by the remote server, particular device drivers, player tracking software upgrades, and a particular communication protocol supported by the remote server. Details of this method are described in co-pending U.S. application Ser. No. 09/838,033, filed on Mar. 19, 2001, by Criss-Puskiecicz, et al., entitled, "UNIVERSAL PLAYER TRACKING SYSTEM," which is incorporated herein in its entirety and all for purposes

In some embodiments, the player tracking functions may be implemented by both the logic device 410 and the master gaming controller 54. For instance, the master gaming controller may execute voice recognition software to interpret voice commands input from the microphone 56. As another example, the master gaming controller 54 may execute software for displaying game service interfaces on the display 315 and may receive touch screen events from the touch screen 416. For example, the master gaming controller may execute software for a game service interface allowing a "point of play" registration for a player tracking program. Thus, player tracking software such as the player tracking protocols may be stored on a memory located on the gaming machine which is separate from the player tracking unit. In some embodiments, the player tracking software stored on the memory on the gaming machine may be executed by the master gaming controller 54 on the gaming machine. In other embodiments, the player tracking software

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stored on the memory on the gaming machine may be executed by the logic device 410 on the player tracking unit.

The logic device 410 includes a network interface board 406 configured or designed to allow communication between the player tracking unit 300 and other remote devices such as the player tracking server residing on local area networks, such as a casino area network, a personal area network such as a piconet (e.g. using Bluetooth), or a wide area network such as the Internet. The network interface board 406 may allow wireless or wired communication with the remote devices. The network interface board may be connected to a firewall 412. The firewall may be hardware, software or combinations of both that prevent illegal access of the gaming machine by an outside entity connected to the gaming machine. The internal firewall is designed to prevent someone such as a hacker from gaining illegal access to the player tracking unit or gaming machine and tampering with it in some manner. For instance, an illegal access may be an attempt to plant a program in the player tracking unit that alters the operation of the gaming machine allowing it to perform an unintended function.

The communication board 404 may be configured to allow communication between the logic device 410 and the player tracking interface devices including 325, 315, 416, 316, 56 and 456 and to allow communication between the logic device 410 and the master gaming controller 54. Additional details of communication between the processor 402, display 315 and touch screen 416 are described with reference to FIG. 6. The wireless interface 364 may be used to allow the player tracking unit and possibly the master gaming controller 54 to communicate with portable wireless devices or stationary devices using a wireless communication standard. The wireless interface 364 may be connected to an antenna 357. In some embodiments, the wireless interface 364 may be incorporated into the communication board 404. In addition, in some embodiments, the logic device 410 and the master gaming controller 54 may communicate using a non-proprietary standard wireless communication protocol such as Bluetooth, IrDA, IEEE 802.11a, IEEE 802.11b, IEEE 802.11x (e.g. other IEEE 802.11 standards such as IEEE 802.11c, IEEE 802.11d, IEEE 802.11e, etc.), hiperlan/2, and HomeRF, or using a non-proprietary standard wired communication protocol such as USB, Firewire, IEEE 1394 and the like. In other embodiments, the logic device 410 and the master gaming controller may communicate using a proprietary communication protocol used by the manufacturer of the gaming machine such as Netplex.

The communication between the player tracking unit 400 and 1) the player tracking interface devices 411, 2) the master gaming controller 54, 3) the player tracking server 62 and 4) any other external or internal gaming devices may be encrypted. In one embodiment, the logic device 410 may poll the player tracking interface devices for information. For instance, the logic device 410 may poll the card reader 325 to determine when a card has been inserted into the card reader or may poll the touch screen 416 to determine when the touch screen has been touched. When polled, the touch screen may send the coordinate location of a touch location on the touch screen sensor. In some embodiments, the player tracking interface devices 411 may contact the logic device 410 when a player tracking event such as a card being inserted into the card reader or the touch screen 416 being touched has occurred.

The logic device 410, using an appropriate device driver, may send instructions to the various player tracking interface devices to perform specific operations. For instance,

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after a card has been inserted into the card reader 325, the processor logic device may send a "read card" instruction to the card reader, "display game service interface A" instructions to the display 315 and a "good luck" voice message to speaker 54. In addition, the logic device 410 may be configured to allow the master gaming controller 54 to send instructions to the player tracking interface devices via the logic device 410. As an example, after a card has been inserted into the card reader 325, the processor logic 410 may determine that the card is for a gaming application controlled by the master gaming controller 54 and send a message to the master gaming controller 54 indicating a card has been inserted into the card reader. For instance, when a player has requested a "point of play registration," a registration interface may be displayed on the main display with a touch screen on the gaming machine rather than on a touch screen display on the player tracking unit. In response, to the message from the logic device, the master gaming controller 54 may send a series of commands to the player tracking interface devices such as a "read card" instruction to the card reader 325, a flash light pattern "A" command to the light panel 316, and a "display message" instruction to the display 315 via the logic device 410. The instructions from the master gaming controller 54 to the player tracking interface devices may be obtained from gaming application software executed by the master gaming controller 54. The gaming application software may or may not be related to player tracking services.

The player tracking unit 300 may include one or more standard peripheral communication connections (not shown). The logic device 410 may be designed or configured to communicate with the master gaming controller 54 and the player tracking interface devices using a standard peripheral connection, such as an USB connector, and using a standard communication protocol, such as USB. Details of using a standard peripheral communication connection are described in co-pending U.S. patent application Ser. No. 09/414,659, filed Oct. 6, 1999, by LeMay, et al., entitled, "STANDARD PERIPHERAL COMMUNICATION," which is incorporated herein in its entirety and for all purposes.

In one embodiment, the peripheral devices 411 on the player tracking unit such as the display 315 and the touch screen 416 may communicate using both wired and wireless communications. For instance, the processor 402 may communicate with the touch screen 416 via a USB connector and using a USB communication protocol. However, the master gaming controller 54 may communicate directly with the touch screen 416 or may communicate with the touch screen 416 through the communication board 404 using a wireless communication protocol such as Bluetooth, IrDA, IEEE 802.11a, IEEE 802.11b, IEEE 802.11x (e.g. other IEEE 802.11 standards such as IEEE 802.11c, IEEE 802.11d, IEEE 802.11e, etc.), hiperlan/2, and HomeRF.

FIG. 6 is a block diagram of processor board with a touch screen display in a player tracking unit for one embodiment of the present invention. The player tracking unit communicates with a display 514 and touch screen 516 using a PC-like architecture. The player tracking CPU 402 communicates with memory control chip set 502 and RAM 504 via the local micro-processor bus. A bus interface unit 506 provides an interface between the microprocessor bus and a PCI bus 512 and provides an interface between the microprocessor bus and an ISA bus 522. An Ethernet interface 508 is located on the PCI bus 512. The Ethernet interface allows communication with a local area network (LAN) at 10/100 MB communication rates. The processor 402 may commu-

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nicate with a player tracking server and other gaming devices located on the LAN via the Ethernet interface 508.

A display controller 510 for the touch screen display 514 is also located on PCI bus 512. The display controller interprets instructions from the processor 402 that allow video content such as game service interfaces, video streaming, games, bonus games, video conferencing, advertising, movies, television programs and web-browsers to be displayed on the display 514. The touch screen controller 518, which is integrated into the touch screen assembly, operates the touch screen sensor, such as by applying a voltage, and interprets touch screen inputs. For example, for a capacitive touch screen sensor, a voltage change in the sensor as the result of a touch may be converted to x and y coordinates or pixel locations by the touch screen controller 518. The touch screen controller sends touch screen event data to an I/O controller 520 via a serial connection 522. The serial connection between the touch screen controller 518 and the I/O controller may be a wire connection that employs USB, RS232, PS/2, Firewire or IEEE1394 or a wireless connection that employs wireless connection standard such as Bluetooth, IrDA, IEEE 802.11a, IEEE 802.11b, IEEE 802.11x (e.g. other IEEE 802.11 standards such as IEEE 802.11c, IEEE 802.11d, IEEE 802.11e, etc.), hiperlan/2, and HomeRF.

The I/O controller 520 sends touch screen events received from the touch screen controller to the bus interface unit 506 via the ISA bus 522 and on to the processor 402. A legacy network interface may be connected to the ISA Bus 522. The legacy network interface allows the processor to communicate with gaming devices connected to the player tracking unit using legacy communication protocols such as fiber optic, current loop (IGT proprietary standard) and RS-485.

Turning to FIG. 7, more details of using a player tracking system in the context of game play on a gaming machine are described. In FIG. 7, a video gaming machine 2 of the present invention is shown. Machine 2 includes a main cabinet 4, which generally surrounds the machine interior (not shown) and is viewable by users. The main cabinet includes a main door 8 on the front of the machine, which opens to provide access to the interior of the machine. Attached to the main door are player-input switches or buttons 32, a coin acceptor 28, and a bill validator 30, a coin tray 38, and a belly glass 40. Viewable through the main door is a video display monitor 34 and an information panel 36. The display monitor 34 will typically be a cathode ray tube, high resolution flat-panel LCD, or other conventional electronically controlled video monitor. A touch screen may be mounted over the display monitor 34 and game service interfaces may be displayed on the touch screen monitor. The information panel 36 may be a back-lit, silk screened glass panel with lettering to indicate general game information including, for example, the number of coins played. The bill validator 30, player-input switches 32, video display monitor 34, and information panel are devices used to play a game on the game machine 2. The devices are controlled by circuitry (see FIG. 1) housed inside the main cabinet 4 of the machine 2. Many possible games, including traditional slot games, video slot games, video poker, video black jack, video keno, video pachinko, lottery games and other games of chance as well as bonus games may be provided with gaming machines of this invention.

The gaming machine 2 includes a top box 6, which sits on top of the main cabinet 4. The top box 6 houses a number of devices, which may be used to add features to a game being played on the gaming machine 2, including speakers 10, 12, 14, a ticket printer 18 which may print bar-coded tickets 20

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used as cashless instruments. A secondary display 44, which may also include a touch screen, is mounted in the top box. The secondary display 44 may also be used to operate game service interfaces.

The player tracking unit mounted within the top box 6 includes a touch screen display 22 for entering player tracking information, displaying player tracking information and displaying game service interfaces. The player tracking unit also includes a card reader 24 for entering a magnetic striped card containing player tracking information and a speaker/microphone 42 for projecting sounds and inputting voice data. In addition, the player tracking unit may include additional peripheral interface devices such as biometric input devices as described with respect to FIGS. 4A and 4B.

Understand that gaming machine 2 is but one example from a wide range of gaming machine designs on which the present invention may be implemented. For example, not all suitable gaming machines have top boxes or player tracking features. Further, some gaming machines have two or more game displays—mechanical and/or video. And, some gaming machines are designed for bar tables and have displays that face upwards. Still further, some machines may be designed entirely for cashless systems. Such machines may not include such features as bill validators, coin acceptors and coin trays. Instead, they may have only ticket readers, card readers and ticket dispensers. As another example, a game may be generated in on a host computer and may be displayed on a remote terminal or a remote computer. The remote computer may be connected to the host computer via a network of some type such as the Internet. Those of skill in the art will understand that the present invention, as described below, can be deployed on most any gaming machine now available or hereafter developed.

Returning to the example of FIG. 4, when a user wishes to play the gaming machine 2, he or she inserts cash through the coin acceptor 28 or bill validator 30. In addition, the player may use a cashless instrument of some type to register credits on the gaming machine 2. For example, the bill validator 30 may accept a printed ticket voucher, including 20, as an indicia of credit. As another example, the card reader 24 may accept a debit card or a smart card containing cash or credit information that may be used to register credits on the gaming machine.

Prior to beginning a game play session on the gaming machine 2, a player may insert a player tracking card into the card reader 24 to initiate a player tracking session. In some embodiments, after inserting their card, the player may be visually prompted on the display screen 22 or aurally prompted using the speaker to enter identification information such as a PIN code using the touch screen display 22. Typically, the player tracking card may remain in the card reader 24 during the game play session. As another example, the gaming machine may transfer player tracking information from portable wireless device worn by the player via a wireless interface device (not shown) on the gaming machine 2. An advantage of using a portable wireless device is that the transfer of player tracking information is automatic and the player does not have to remember to correctly insert a player tracking card into the gaming machine.

In a player tracking session on the gaming machine, features of the player's game play during a game play session on the gaming machine, such as an amount wagered during the game play session, may be converted to player tracking points and stored in the player's player tracking account on a player tracking server. Later, accumulated player tracking points may be redeemed for rewards or for

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"comps" for the player such as free meals or free rooms. Usually, the player tracking card inserted into the card reader contains at least player tracking account information. When the card is inserted correctly into the card reader 24, the information stored on the card, such as the player's account information, may be read by the card reader and transferred by a logic device on the player tracking unit (see FIG. 5) to the player tracking server. The player tracking account information allows the player tracking server to store player tracking points accumulated during the game play session to the appropriate account. When player tracking information is not provided by the player, for instance, when the player tracking card has been inserted incorrectly into the card reader 24 or the player is not a member of a player tracking program, player tracking points are not accumulated. However, using the methods described with respect to FIGS. 3E, 9 and 10, when a player is not a member of the player tracking program, the player may register at the gaming machine.

During the course of a game, a player may be required to make a number of decisions, which affect the outcome of the game. For example, a player may vary his or her wager on a particular game, select a prize for a particular game, or make game decisions which affect the outcome of a particular game. The player may make these choices using the player-input switches 32, the video display screen 34 or using some other device which enables a player to input information into the gaming machine. Certain player choices may be captured by player tracking software loaded in a memory inside of the gaming machine. For example, the rate at which a player plays a game or the amount a player bets on each game may be captured by the player tracking software.

During certain game events, the gaming machine 2 may display visual and auditory effects that can be perceived by the player. These effects add to the excitement of a game, which makes a player more likely to continue playing. Auditory effects include various sounds that are projected by the speakers 10, 12, 14. Visual effects include flashing lights, strobing lights or other patterns displayed from lights on the gaming machine 2, from lights behind the belly glass 40 or the light panel on the player tracking unit 44.

After the player has completed a game, the player may receive game tokens from the coin tray 38 or the ticket 20 from the printer 18, which may be used for further games or to redeem a prize. Further, the player may receive a ticket 20 for food, merchandise, or games from the printer 18. The type of ticket 20 may be related to past game playing recorded by the player tracking software within the gaming machine 2. In some embodiments, these tickets may be used by a game player to obtain game services or as a receipt for game service transactions made on the gaming machine.

FIG. 8 is a flow chart of a method for providing gaming services on a touch screen display of the present invention. In 700, a user, such as a game player or a casino operator, may enter identification information via a touch screen display. For instance, a PIN number may be entered via a key pad displayed on the touch screen display, a player may "sign-in" by providing a signature via the touch screen display or combinations thereof. In 705, a game service interface menu may be displayed to the touch screen display. The game service interface menu may allow the user to select from a number of game service interface available to the user. The game service interface menu may be user specific. For instance, a casino operator may have access to different game service interfaces than a game player. As another example, a "special" status game player, as determined by a

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gaming establishment, may have access to special game service interfaces not available to every game player.

In 710, a game service interface is selected from the game service interface menu using the touch screen display. In 715, the selected game service interface is displayed. For instance, the selected game service interface may allow a player to join a player tracking program at a gaming machine. In 720, a processor, providing player tracking services, may receive a number of touch screen events via the game service interface that may be converted into game service transaction information. The location of touches on the touch screen display may allow the processor to generate game service transaction information and instructions. For instance, as part of a "point of play registration," a player may type in their name and address by touching the touch screen at locations where different alpha-numeric symbols are displayed.

In 725, based upon information entered by the user, a game service or game service transaction may be provided. As an example of a game service, the user may be able to view selected video content on the touch screen display. As examples of game service transactions, the user may be registered in a player tracking program, redeem a prize, or transfer credits to one or more cashless instruments such as printed ticket. In 730, a receipt may be optionally generated as a record of the game service transaction provided. The receipt may be printed on a printer located on the gaming machine. As examples, the receipt may be a coupon for a promotion requested by the player or an entertainment reservation made by the player. In 735, the user may have the option to request access to another game service interface. When the user requests access to another game service interface, the game service interface menu may be re-displayed according to 705.

FIG. 9 is a flow chart of a method for providing a "point of play" loyalty program registration on a gaming machine of the present invention. In FIG. 9, the method is implemented on a gaming machine. However, as described with respect to FIG. 3E, the method may be implemented on gaming devices such as a hand-held wireless device or a casino kiosk. In 800, a request to register a player for a loyalty program is detected.

The registration request may be initiated using a touch screen interface located on a player tracking display, main display or secondary display on the gaming machine. Further, the registration request may be initiated using another input mechanism on the gaming machine such as input buttons or a key pad available on the gaming machine. In one embodiment, the registration request may be initiated automatically by the gaming machine. For instance, when a player is not involved in a player tracking session during a game play session on the gaming machine, the gaming machine may initiate a registration request based upon the amount a player has wagered over a time period during the game play session. The gaming machine may initiate the request by displaying a message to the player asking them if they would like to register for a loyalty program.

In 805, a game service interface is displayed on a touch screen peripheral interface available on the gaming machine such as on but not limited to the player tracking unit. In 810, information from a loyalty program instrument such as a magnetic striped card, smart card, room key or a portable wireless device may be read into the gaming machine. For instance, in one embodiment, to register for a player tracking program, a blank magnetic striped card may be inserted into a card reader on the gaming machine to read a serial number

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on the card. In 815, the user may enter identification information, such as a name and address, via the registration touch screen interface which is received by a processor located on the gaming machine such as in the player tracking unit or in the master gaming controller. When the user has completed entering the information, an input button on the touch screen display such as "register" button may be touched (see FIG. 3E).

In 818, the information entered by the user is checked. In 816, when additional information is required, a message may be sent to the touch screen display with a request for the missing information. In 820, when the user has entered the required registration information, a registration request message is generated by a processor on the gaming machine and sent to a playing tracking server. The registration request message may include player identification information and information obtained from the loyalty program instrument such as the serial number from the magnetic striped card. In some embodiments, the network connection to the player tracking server may be unavailable. In this case, the processor may store the registration request message and send it when the player tracking server becomes available.

In 825, the gaming machine receives a registration reply from the player tracking server. In 830, the gaming machine determines if the registration has been confirmed from the registration reply message. In 845, when the registration has not been confirmed, a message may be displayed to the player indicating the registration request was denied with a reason for the denial. For instance, the registration may be denied because the player is already registered for the player tracking program. In 833, when the registration has been confirmed by the player tracking server, a confirmation message may be displayed to the player and a player tracking session may be initiated on the gaming machine 840. In 835, a receipt indicating the registration has occurred may be generated by the gaming machine.

After registration, the player may use the registered loyalty program instrument, such as a magnetic striped card, PDA (personal digital assistant), cell phone, room key or smart card, at other gaming machines to initiate a loyalty program sessions such as player tracking sessions. In some embodiments, the loyalty program instrument used during the registration process may be a permanent membership card that may be used by the player to participate in the loyalty program. In other embodiments, the loyalty program instrument used during the registration may be temporarily used by the player until a permanent membership card is mailed to the player.

FIG. 10 is a flow chart of a method for providing a "point of play" loyalty program registration on a player tracking server of the present invention. In 900, the player tracking server receives a registration request message from a gaming device. The gaming device may be at least one of a gaming machine, casino kiosk or hand-held wireless device. The sent message may be encrypted by the gaming device and then decrypted by the player tracking server. The message contents and the message sender may also be validated in some manner before the registration request is processed. In 905, the player tracking server may compare identification information and instrument information contained in the registration request message with information stored in a player tracking database. In 910, the player tracking server may determine if the player is already a member of the player tracking program. In 915, when the player is already registered, a registration reply message may be generated and sent to the gaming device indicating that the registration was denied because the player is already a member of the program.

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In 920, when the player is not a member of the player tracking program, the player tracking server may generate a new player tracking account using the player identification information and loyalty program instrument information contained in the registration request message. The identification information may include biometric information such as scanned finger-print, picture, voice print or signature that may be stored in the new player tracking account. In 925, a registration reply message, which includes a confirmation of the registration, is generated by the player tracking server and sent to the gaming device. In 930, a PIN number may later be sent to the player.

Although the foregoing invention has been described in some detail for purposes of clarity of understanding, it will be apparent that certain changes and modifications may be practiced within the scope of the appended claims. For instance, while the gaming machines of this invention have been depicted as upright models having top box mounted on top of the main gaming machine cabinet, the use of gaming devices in accordance with this invention is not so limited. For example, gaming machine may be provided without a top box or the gaming machine may be of a slant-top or a table top design.

What is claimed is:

1. A player tracking unit comprising:  
a display for displaying video images;  
a touch screen including:  
a touch screen sensor mounted over the display;  
a touch screen controller for detecting an activation of the touch screen sensor and for sending input signals with information indicating an activated location on the touch screen sensor;  
a sound projection device wherein the sound projection device is adapted for outputting sound messages in response to operations performed on the player tracking unit by a user;  
a card reader for reading a player tracking card storing player tracking information;  
a logic device adapted for;  
a) communicating with the display, the touch screen, the card reader, the sound projection device, a master gaming controller that controls a game played on a gaming machine and a player tracking server,  
b) receiving input signals from the touch screen controller with the information indicating the activated location on the touch screen sensor;  
c) executing gaming logic wherein the gaming logic comprises:  
i) providing video images on the display for a list of game services available on the player tracking unit  
ii) generating video images for a plurality game surface interfaces on the display, each game service interface including at least one input area and corresponding to one of the game services available on the player tracking unit, wherein the plurality of game service interfaces includes a key pad interface for entering alpha-numeric data;  
iii) generating input data corresponding to touches in the input area;  
iv) generating one or more of: 1) a bonus game interface on the display and receiving input signals from the touch screen corresponding to input areas on the bonus game interface wherein the bonus game interface is used to present a bonus game, 2) a loyalty program account interface on the display and receiving input signals from the touch screen

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corresponding to input areas on the loyalty program account interface wherein the loyalty program account interface is used to view loyalty program account information, and 3) a loyalty program registration interface on the display and receiving input signals from the touch screen corresponding to input areas on the loyalty program registration interface wherein the loyalty program registration interface is used to register a person in a loyalty program; and

a housing for securing the display, the sound projection device, the card reader and the logic device.

2. The player tracking unit of claim 1, further comprising: one or more of the following player tracking interface devices connected to the housing: a bonus button, a microphone, a camera, a wireless interface device, a proximity sensor, a key pad, a bar-code reader, an illumination device, a retinal scanner and a finger print reader.

3. The player tracking unit of claim 1, wherein the touch screen sensor is at least one of a capacitive touch screen sensor, a resistive touch screen sensor and an acoustic wave touch screen sensor.

4. The player tracking unit of claim 1, wherein the display is at least one of a LED display, a LCD display, a plasma display and a CRT.

5. The player tracking unit of claim 1, wherein the display is a color LCD.

6. The player tracking unit of claim 5, wherein the resolution of the display is 320 pixels by 240 pixels.

7. The player tracking unit of claim 1, wherein the touch screen is activated using a finger or a stylus.

8. The player tracking unit of claim 1, wherein the input buttons are selected from the group consisting of alphabetic symbols, numeric symbols and functional symbols.

9. The player tracking unit of claim 8, wherein alphabetic symbols are selected from one or more alphabets.

10. The player tracking unit of claim 8, wherein the functional symbols are animated.

11. The player tracking unit of claim 1, wherein the input buttons are rendered in 3-D.

12. The player tracking unit of claim 1, wherein the input buttons are animated.

13. The player tracking unit of claim 1, wherein the input buttons are surface shaded in color.

14. The player tracking unit of claim 1, wherein a sound is emitted from the sound projection device when the input area is touched.

15. The player tracking unit of claim 1, wherein the logic device communicates with the master gaming controller using at least one of USB, RS-232, and IEE 1394.

16. The player tracking unit of claim 1, wherein the logic device communicates with master gaming controller using a wireless communication protocol.

17. The player tracking unit of claim 10, wherein the wireless communication protocol is selected from the group consisting of Bluetooth, IrDA, IEEE 802.11a, IEEE 802.11b, IEEE 802.11x, hiperlan/2, and HomeRF.

18. The player tracking unit of claim 1, wherein the logic device is adapted for communicating with the touch screen using at least one of a USB communication standard, an IEEE 1394 communication standard or a PS/2 communication standard.

19. The player tracking unit of claim 1, further comprising:

an Ethernet interface.

20. The player tracking unit of claim 1, wherein said gaming logic further comprises generating a game interface on the display and receiving input

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- signals from the touch screen corresponding to input areas on the game interface wherein the game interface is used to play a game.
21. The player tracking unit of claim 1, wherein the key pad interface is used to input player tracking identification information. 5
22. The player tracking unit of claim 1, wherein the logic device is further adapted for generating the bonus game interface on the display. 10
23. The player tracking unit of claim 1, wherein said gaming logic further comprises generating a writing interface on the display and receiving input signals from the touch screen corresponding to game information written on the writing interface. 15
24. The player tracking unit of claim 23, wherein said game logic further comprises recognizing alpha-numeric characters corresponding to the game information written on the writing interface. 20
25. The player tracking unit of claim 1, wherein the logic device is further adapted for generating the loyalty program account interface on the display. 25
26. The player tracking unit of claim 1, wherein said gaming logic further comprises generating a metering information interface on the display and receiving input signals from the touch screen corresponding to input areas on the metering information interface wherein the metering information interface is used to view metering information from the gaming machine. 30
27. The player tracking unit of claim 1, wherein is further adapted for generating the loyalty program registration interface on the display. 35
28. The player tracking unit of claim 1, wherein said gaming logic further comprises generating an entertainment content interface on the display and receiving input signals from the touch screen corresponding to input areas on the entertainment content interface wherein the entertainment content interface is used to select an entertainment content source to be displayed on said display. 40
29. The player tracking unit of claim 1, wherein said gaming logic further comprises for generating a prize redemption interface on the display and receiving input signals from the touch screen corresponding to input areas on the prize redemption interface wherein the prize redemption interface is used to redeem a prize. 45
30. The player tracking unit of claim 1, wherein said gaming logic further comprises for generating a calculator interface on the display and receiving input signals from the touch screen corresponding to input areas on the calculator interface wherein the calculator interface is used to perform arithmetic operations. 50
31. The player tracking unit of claim 1, wherein the key pad interface is used to request a drink. 55
32. The player tracking unit of claim 1, wherein the key pad interface is used to enter a PIN code. 60
33. The player tracking unit of claim 1, wherein said gaming logic further comprises a diagnostic interface on the display and receiving input signals from the touch screen corresponding to input areas on the diagnostic interface wherein the diagnostic interface is used to obtain status information for gaming device on the gaming machine. 65

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34. The player tracking unit of claim 1: wherein said gaming logic further comprises a web interface on the display and receiving input signals from the touch screen corresponding to input areas on the web interface wherein the web interface is used to view web pages on the Internet.
35. The player tracking unit of claim 1, wherein said gaming logic further comprises a reservation interface on the display and receiving input signals from the touch screen corresponding to input areas on the reservation interface wherein the reservation interface is used to make a reservations for at least one of food, lodging and entertainment.
36. The player tracking unit of claim 1, wherein said gaming logic further comprises generating a communication interface on the display and receiving input signals from the touch screen corresponding to input areas on the communication interface wherein the communication interface is used to communicate with another person.
37. The player tracking unit of claim 1, wherein said gaming logic further comprises generating an account interface on the display and receiving input signals from the touch screen corresponding to input buttons on the account interface wherein the account interface is used to transfer funds to a banking account.
38. The player tracking unit of claim 1, further comprising an illumination device wherein the illumination device is illuminated to signal a casino service representative to register a player to a loyalty program. 30
39. The player tracking unit of claim 1, wherein one or more portions of the display are illuminated for at least one of: a) to signal a casino service representative to register a player to a loyalty program, b) to provide game information to a game player, c) to indicate machine status information and d) combinations thereof.
40. A gaming machine comprising:
- a master gaming controller adapted for controlling one or more games played on the gaming machine and communicating with a player tracking unit connected to the gaming machine; and
  - the player tracking unit comprising:
    - a display for displaying video images;
    - a touch screen including:
      - a touch screen sensor mounted over the display;
      - a touch screen controller for detecting an activation of the touch screen sensor and for sending input signals with information indicating an activated location on the touch screen sensor;
    - a sound projection device wherein the sound projection device is adapted for outputting sound messages in response to operations performed on the player tracking unit by a user;
    - a card reader for reading a player tracking card storing player tracking information;
    - a logic device adapted for:
      - a) communicating with the display, the touch screen, the card reader, the sound projection device, a master gaming controller that controls a game played on a gaming machine and a player tracking server,
      - b) receiving input signals from the touch screen controller with the information indicating the activated location on the touch screen sensor;

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- c) executing gaming logic wherein the gaming logic comprises:
  - i) providing video images on the display for a list of game services available on the player tracking unit
  - ii) generating video images for a plurality game surface interfaces on the display, each game service interface including at least one input area and corresponding to one of the game services available on the player tracking unit, wherein the plurality of game service interfaces includes a key pad interface for entering alpha-numeric data;
  - iii) generating input data corresponding to touches in the input area;
  - iv) generating one or more of: 1) a bonus game interface on the display and receiving input signals from the touch screen corresponding to input areas on the bonus game interface wherein the bonus game interface is used to present a bonus game, 2) a loyalty program account interface on the display and receiving input signals from the touch screen corresponding to input areas on the loyalty program account interface wherein the loyalty program account interface is used to view loyalty program account information, and 3) a loyalty program registration interface on the display and receiving input signals from the touch screen corresponding to input areas on the loyalty program registration interface wherein the loyalty program registration interface is used to register a person in a loyalty program; and

a housing for securing the display, the sound projection device, the card reader and the logic device.

41. The gaming machine of claim 40, wherein the master gaming controller is adapted for operating one or more of player tracking interface devices, the display and the touch screen.

42. The gaming machine of claim 40, wherein the one or more games is selected from the group consisting of video slot games, mechanical slot games, video blackjack games, video poker games, video keno games, video pachinko games, video card games, video games of chance and combinations thereof.

43. The gaming machine of claim 40, wherein at least one of the logic device and the master gaming controller is adapted for communicating with a portable wireless device.

44. The gaming machine of claim 43, wherein the player tracking unit is capable of sending loyalty program information to the portable wireless device and receiving loyalty program information from the portable wireless device.

45. The gaming machine of claim 43, wherein the portable wireless device is a personal digital assistant.

46. The gaming machine of claim 43, wherein at least one of the logic device and the master gaming controller communicate with a portable wireless device using a wireless communication protocol selected from the group consisting of Bluetooth, IrDA, IEEE 802.11a, IEEE 802.11b, IEEE 802.11x, hiperlan/2, and HomeRF.

47. The gaming machine of claim 40, wherein the master gaming controller and the logic device communicate with each other using a wireless communication protocol selected from the group consisting of Bluetooth, IrDA, IEEE 802.11a, IEEE 802.11b, IEEE 802.11x, hiperlan/2, and HomeRF.

48. The gaming machine of claim 40, wherein the master gaming controller and the logic device communicate with each other using a communication protocol selected from the group consisting of USB, IEE 1394, RS-232, and IrDA.

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49. The gaming machine of claim 40, wherein the gaming logic further comprises generating a game interface on the display and receiving input signals from the touch screen corresponding to input areas on the game interface wherein the game interface is used to play a game.

50. The gaming machine of claim 40, wherein the logic device is further adapted for generating the bonus game interface on the display.

51. The gaming machine of claim 40, wherein the gaming logic further comprises generating a writing interface on the display and receiving input signals from the touch screen corresponding to game information written on the writing interface.

52. The gaming machine of claim 51, wherein the gaming logic further comprises recognizing alpha-numeric characters corresponding to the game information written on the writing interface.

53. The gaming machine of claim 40, wherein the logic device is further adapted for generating the loyalty program account interface on the display.

54. The gaming machine of claim 40, wherein the gaming logic further comprises generating a metering information interface on the display and receiving input signals from the touch screen corresponding to input areas on the metering information interface wherein the metering information interface is used to view metering information from the gaming machine.

55. The gaming machine of claim 40, wherein the logic device is further adapted for generating the loyalty program registration interface on the display.

56. The gaming machine of claim 40, wherein the gaming logic further comprises generating an entertainment content interface on the display and receiving input signals from the touch screen corresponding to input areas on the entertainment content interface wherein the entertainment content interface is used to select an entertainment content source to be displayed on said display.

57. The gaming machine of claim 40, wherein the gaming logic further comprises generating a prize redemption interface on the display and receiving input signals from the touch screen corresponding to input areas on the prize redemption interface wherein the prize redemption interface is used to redeem a prize.

58. The gaming machine of claim 40, wherein the gaming logic further comprises generating a calculator interface on the display and receiving input signals from the touch screen corresponding to input areas on the calculator interface wherein the calculator interface is used to perform arithmetic operations.

59. The gaming machine of claim 40, wherein the key pad interface is used to request drink.

60. The gaming machine of claim 40, wherein the key pad interface is used to enter a PIN code.

61. The gaming machine of claim 40, wherein the gaming logic further comprises generating a diagnostic interface on the display and receiving input signals from the touch screen corresponding to input areas on the diagnostic interface wherein the diagnostic interface is used to obtain status information for gaming device on the gaming machine.

62. The gaming machine of claim 40, wherein the gaming logic further comprises generating a web interface on the display and receiving input signals from the touch screen corresponding to input areas on the web interface wherein the web interface is used to view web pages on the Internet.

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63. The gaming machine of claim 40, wherein the gaming logic further comprises generating a reservation interface on the display and receiving input signals from the touch screen corresponding to input areas on the reservation interface wherein the reservation interface is used to make reservations for at least one of food, lodging and entertainment.

64. The gaming machine of claim 40, wherein the gaming logic further comprises generating a communication interface on the display and receiving input signals from the touch screen corresponding to input areas on the communication interface wherein the communication interface is used to communicate with another person.

65. The gaming machine of claim 40, wherein the gaming logic further comprises generating an account interface on the display and receiving input signals from the touch screen corresponding to input buttons on the account interface wherein the account interface is used to transfer funds to a banking account.

66. A player tracking system comprising:  
a player tracking server;

a plurality of gaming machines, said gaming machines each comprising:

a master gaming controller adapted for controlling one or more games played on the gaming machine and communicating with a player tracking unit connected to the gaming machine; and

the player tracking unit comprising:

a display for displaying video images;  
a touch screen including;

a touch screen sensor mounted over the display;  
a touch screen controller for detecting an activation of the touch screen sensor and for sending input signals with information indicating an activated location on the touch screen sensor;

a sound projection device wherein the sound projection device is adapted for outputting sound messages in response to operations performed on the player tracking unit by a user;

a card reader for reading a player tracking card storing player tracking information;

a logic device adapted for;

a) communicating with the display, the touch screen, the card reader, the sound projection device, the master gaming controller that controls the game played on the gaming machine and the player tracking server,

b) receiving input signals from the touch screen controller with the information indicating the activated location on the touch screen sensor;

c) executing gaming logic wherein the gaming logic comprises:

i) providing video images on the display for a list of game services available on the player tracking unit

ii) generating video images for a plurality game surface interfaces on the display, each game service interface including at least one input area and corresponding to one of the game services available on the player tracking unit, wherein the plurality of game service interfaces includes a key pad interface for entering alpha-numeric data;

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iii) generating input data corresponding to touches in the input area;

iv) generating one or more of: 1) a bonus game interface on the display and receiving input signals from the touch screen corresponding to input areas on the bonus game interface wherein the bonus game interface is used to present a bonus game, 2) a loyalty program account interface on the display and receiving input signals from the touch screen corresponding to input areas on the loyalty program account interface wherein the loyalty program account interface is used to view loyalty program account information, and 3) a loyalty program registration interface on the display and receiving input signals from the touch screen corresponding to input areas on the loyalty program registration interface wherein the loyalty program registration interface is used to register a person in a loyalty program; and

a housing for securing the display, the sound projection device, the card reader and the logic device.

67. A method of providing one or more game services on a gaming machine using a touch screen display mounted in a player tracking unit, the method comprising:

displaying a key pad interface with a plurality of input buttons to the touch screen display;

receiving one or more first input signals from a touch screen wherein each input signal corresponds to a selection of one of the plurality of input buttons on the key pad interface;

displaying a list of game services on the touch screen display;

receiving a second input signal from the touch screen that contains information indicating a selected game service from the list of game services;

displaying a game service interface with a plurality of input buttons for the selected game service to the touch screen display wherein the input buttons are used to provide the selected game service;

receiving a plurality of third input signals from the touch screen wherein said plurality of third input signals are used to select input buttons on the game service interface; and

initiating a loyalty program session.

68. The method of claim 67, further comprising: detecting an input signal to initiate a loyalty program session.

69. The method of claim 67, further comprising: entering a PIN number using the key pad interface.

70. The method of claim 67, further comprising: validating an identity of a user of the player tracking unit.

71. The method of claim 70, wherein the list of game services is varied according to the identity of the user.

72. The method of claim 67, further comprising: displaying a hand-writing interface to the touch screen display.

73. The method of claim 72, further comprising: receiving written input from the hand-writing interface on the touch screen.

74. The method of claim 67, wherein the touch screen is activated using a finger or a stylus.

75. The method of claim 67, wherein the input buttons are selected from the group consisting of alphabetic symbols, numeric symbols and functional symbols.

76. The method of claim 67, wherein alphabetic symbols are selected from one or more alphabets.

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77. The method of claim 76, wherein the functional symbols are animated.

78. The method of claim 67, wherein the input buttons are rendered in 3-D.

79. The method of claim 67, wherein the input buttons are 5 animated.

80. The method of claim 67, wherein the game service interface comprises two or more pages.

81. The method of claim 67, further comprising:

selecting an input button on the key pad interface to order 10 a drink.

82. The method of claim 67, further comprising:

selecting an input button on the key pad interface to request a service.

83. The method of claim 67, wherein the game service is 15 selected from the group consisting of: a) playing a game, b) playing a bonus game, c) registering a player to loyalty program, d) displaying gaming machine metering information, e) performing arithmetic operations, f) making a reservation, g) providing gaming machine diagnostic information, h) displaying loyalty account information, i) redeeming a prize, j) making a food, lodging or entertainment reservation, k) communicating with another person, l) providing a web-based service, m) providing a banking transaction and n) providing machine diagnostics. 25

84. The method of claim 67, further comprising:

providing a receipt.

85. A gaming machine comprising:

a master gaming controller adapted for controlling one or 30 more games played on the gaming machine and communicating with a player tracking unit connected to the gaming machine; and

the player tracking unit comprising;

a display for displaying video images;

a touch screen including;

a touch screen sensor mounted over the display;

a touch screen controller for detecting an activation of 40 the touch screen sensor and for sending input signals with information indicating an activated location on the touch screen sensor;

a sound projection device wherein the sound projection device is adapted for outputting sound messages in response to operations performed on the player tracking unit by a user; 45

a card reader for reading a player tracking card storing player tracking information;

a logic device adapted for;

a) communicating with the display, the touch screen, the card reader, the sound projection device, the 50 master gaming controller that controls the game played on the gaming machine and a player tracking server,

b) receiving input signals from the touch screen controller with the information indicating the activated 55 location on the touch screen sensor;

c) executing gaming logic wherein the gaming logic comprises:

i) providing video images on the display for a list of 60 game services available on the player tracking unit

ii) generating video images for a plurality game service interfaces on the display, each game service interface including at least one input area and corresponding to one of the game services available on the player tracking unit, wherein the 65 plurality of game service interfaces includes a key pad interface for entering alpha-numeric data;

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iii) generating input data corresponding to touches in the input area;

a housing for securing the display, the sound projection device, the card reader and the logic device wherein at least one of the logic device and the master gaming controller is adapted for communicating with a portable wireless device and wherein the player tracking unit is capable of sending loyalty program information to the portable wireless device and receiving loyalty program information from the portable wireless device.

86. A player tracking system comprising:

a player tracking server;

a plurality of wireless devices;

a plurality of gaming machines, said gaming machines each comprising:

a master gaming controller adapted for controlling one or more games played on the gaming machine and communicating with a player tracking unit connected to the gaming machine; and the player tracking unit comprising:

a display for displaying video images;

a touch screen including:

a touch screen sensor mounted over the display; a touch screen controller for detecting an activation of the touch screen sensor and for sending input signals with information indicating an activated location on the touch screen sensor;

a sound projection device wherein the sound projection device is adapted for outputting sound messages in response to operations performed on the player tracking unit by a user;

a card reader for reading a player tracking card storing player tracking information;

a logic device adapted for;

a) communicating with the display, the touch screen, the card reader, the sound projection device, the master gaming controller that controls the game played on the gaming machine and the player tracking server,

b) receiving input signals from the touch screen controller with the information indicating the activated location on the touch screen sensor;

c) executing gaming logic wherein the gaming logic comprises:

i) providing video images on the display for a list of game services available on the player tracking unit

ii) generating video images for a plurality game surface interfaces on the display, each game service interface including at least one input area and corresponding to one of the game services available on the player tracking unit, wherein the plurality of game service interfaces includes a key pad interface for entering alpha-numeric data;

iii) generating input data corresponding to touches in the input area; and

a housing for securing the display, the sound projection device, the card reader and the logic device wherein at least one of the logic device and the master gaming controller is adapted for communicating with the portable wireless devices and wherein the player tracking unit is capable of sending loyalty program information to a first portable wireless device and receiving loyalty program information from the first portable wireless device.

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87. A player tracking unit comprising:  
a display for displaying video images;  
a touch screen including;  
    a touch screen sensor mounted over the display;  
    a touch screen controller for detecting an activation of  
        the touch screen sensor and for sending input signals  
        with information indicating an activated location on  
        the touch screen sensor;  
a sound projection device wherein the sound projection  
device is adapted for outputting sound messages in  
response to operations performed on the player tracking  
unit by a user;  
a card reader for reading a player tracking card storing  
player tracking information;  
a logic device adapted for;  
    a) communicating with the display, the touch screen,  
        the card reader, the sound projection device, a master  
        gaming controller that controls a game played on a  
        gaming machine and a player tracking server,  
    b) receiving input signals from the touch screen controller  
        with the information indicating the activated  
        location on the touch screen sensor;

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- c) executing gaming logic wherein the gaming logic comprises:
  - i) providing video images on the display for a list of game services available on the player tracking unit
  - ii) generating video images for a plurality game surface interfaces on the display, each game service interface including at least one input area and corresponding to one of the game services available on the player tracking unit, wherein the plurality of game service interfaces includes a key pad interface for entering alpha-numeric data;
  - iii) generating input data corresponding to touches in the input area;
  - iv) communicating with a portable wireless device; and
- housing for securing the display, the sound projection device, the card reader and the logic device wherein the player tracking unit is capable of sending loyalty program information to the portable wireless device and receiving loyalty program information from the portable wireless device.

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## **EXHIBIT Q**



US006722985B2

(12) **United States Patent**  
**Criss-Puszkiewicz et al.**

(10) Patent No.: **US 6,722,985 B2**  
(45) Date of Patent: **Apr. 20, 2004**

(54) **UNIVERSAL PLAYER TRACKING SYSTEM**

(75) Inventors: Cynthia Criss-Puszkiewicz, Reno, NV (US); Steven G. LeMay, Reno, NV (US); Richard E. Rowe, Reno, NV (US)

(73) Assignee: IGT, Reno, NV (US)

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## (56) References Cited

## U.S. PATENT DOCUMENTS

|             |         |                 |          |
|-------------|---------|-----------------|----------|
| 4,301,505 A | 11/1981 | Catiller et al. | 364/200  |
| 4,652,998 A | 3/1987  | Koza et al.     | 364/412  |
| 5,367,644 A | 11/1994 | Yokoyama et al. | 395/325  |
| 5,379,382 A | 1/1995  | Work et al.     | 395/275  |
| 5,429,361 A | 7/1995  | Raven et al.    | 463/25   |
| 5,559,794 A | 9/1996  | Willis et al.   | 370/58.3 |
| 5,643,086 A | 7/1997  | Alcom et al.    | 463/29   |
| 5,655,961 A | 8/1997  | Acres et al.    | 463/27   |
| 5,708,838 A | 1/1998  | Robinson        | 395/800  |
| 5,721,958 A | 2/1998  | Kikinis         | 395/888  |
| 5,741,183 A | 4/1998  | Acres et al.    | 463/42   |
| 5,752,882 A | 5/1998  | Acres et al.    | 463/42   |
| 5,759,102 A | 6/1998  | Pease et al.    | 463/42   |

|             |         |              |        |
|-------------|---------|--------------|--------|
| 5,761,647 A | 6/1998  | Boushy       | 705/10 |
| 5,820,459 A | 10/1998 | Acres et al. | 463/25 |
| 5,836,817 A | 11/1998 | Acres et al. | 463/26 |
| 5,876,284 A | 3/1999  | Acres et al. | 463/25 |
| 5,958,020 A | 9/1999  | Evoy et al.  | 710/3  |

(List continued on next page.)

## OTHER PUBLICATIONS

Members of B-Link Technical Committee, "Summary of Comment Regarding Adoption of Internal Bus Standard for Electronic Gaming Machines," 2 Pages, Oct. 26, 1999.

Jim Stockdale, Description of the IGT Netplex Associated Interface System, pp. 1-2; System used in public prior to Oct. 6, 1998.

Wang et al., "Casino Technology: Player Tracking and Slot Accounting Systems", Gaming Res. Rev. J. (USA), Gaming Research & Review Journal, Univ. Nevada (Abstract).

Primary Examiner—Teresa Wallberg

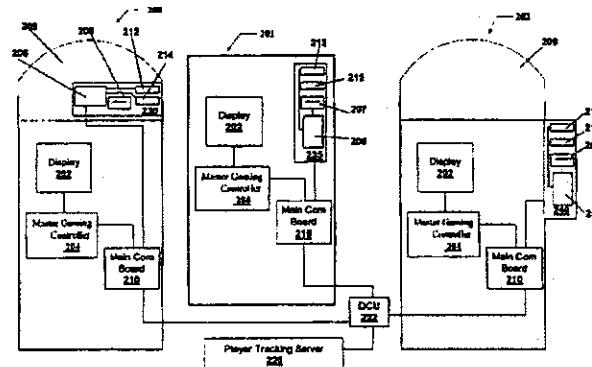
Assistant Examiner—Yveste G. Cherubin

(74) Attorney, Agent, or Firm—Beyer, Weaver & Thomas LLP

## (57) ABSTRACT

A disclosed player tracking unit utilizes a memory arranged to store a plurality of different communication protocols allowing the player tracking unit to communicate with a plurality of different types of gaming machines and a plurality of different types of player tracking servers. The player tracking unit may contain many different types of player tracking peripheral devices such as card readers, key pads, displays, bonus buttons and biometric input mechanisms. The peripheral devices contained in the player tracking unit may be accessible to the master gaming controller on a gaming machine and may be utilized by the master gaming controller for other gaming applications. The player tracking unit may be designed with a standard housing and standard device layout allowing the player tracking unit to fit in many different types of gaming machines with minimal modifications to the gaming machine or the player tracking unit.

111 Claims, 10 Drawing Sheets



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## U.S. PATENT DOCUMENTS

|             |           |                        |         |              |           |                       |        |
|-------------|-----------|------------------------|---------|--------------|-----------|-----------------------|--------|
| 5,978,920 A | 11/1999   | Lee .....              | 713/202 | 6,135,884 A  | **10/2000 | Hedrick et al. ....   | 463/20 |
| 6,003,013 A | 12/1999   | Boushy et al. ....     | 705/10  | 6,135,887 A  | 10/2000   | Pease et al. ....     | 463/42 |
| 6,071,190 A | 6/2000    | Weiss et al. ....      | 463/25  | 6,149,522 A  | 11/2000   | Alcorn et al. ....    | 463/29 |
| 6,088,802 A | 7/2000    | Bialick et al. ....    | 713/200 | 6,162,122 A  | 12/2000   | Acres et al. ....     | 463/29 |
| 6,104,815 A | 8/2000    | Alcorn et al. ....     | 380/251 | 6,183,362 B1 | 2/2001    | Boushy .....          | 463/25 |
| 6,106,396 A | 8/2000    | Alcorn et al. ....     | 463/29  | 6,251,014 B1 | ** 6/2001 | Stockdale et al. .... | 463/16 |
| 6,110,041 A | ** 8/2000 | Walker et al. ....     | 463/20  | 6,368,216 B1 | 4/2002    | Hedrick et al. ....   | 463/20 |
| 6,117,010 A | 9/2000    | Canterbury et al. .... | 463/20  |              |           |                       |        |

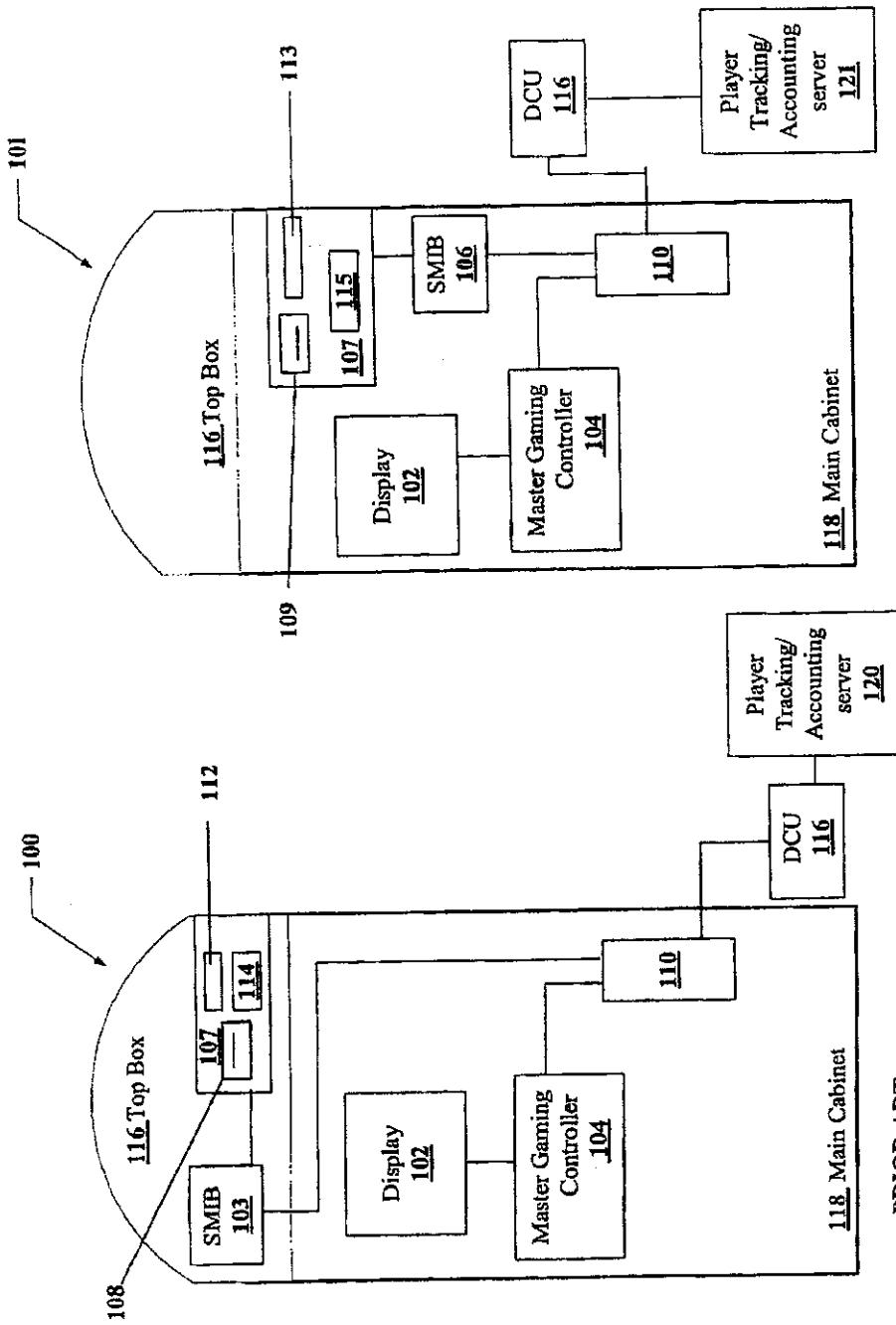
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PRIOR ART

FIG. 1

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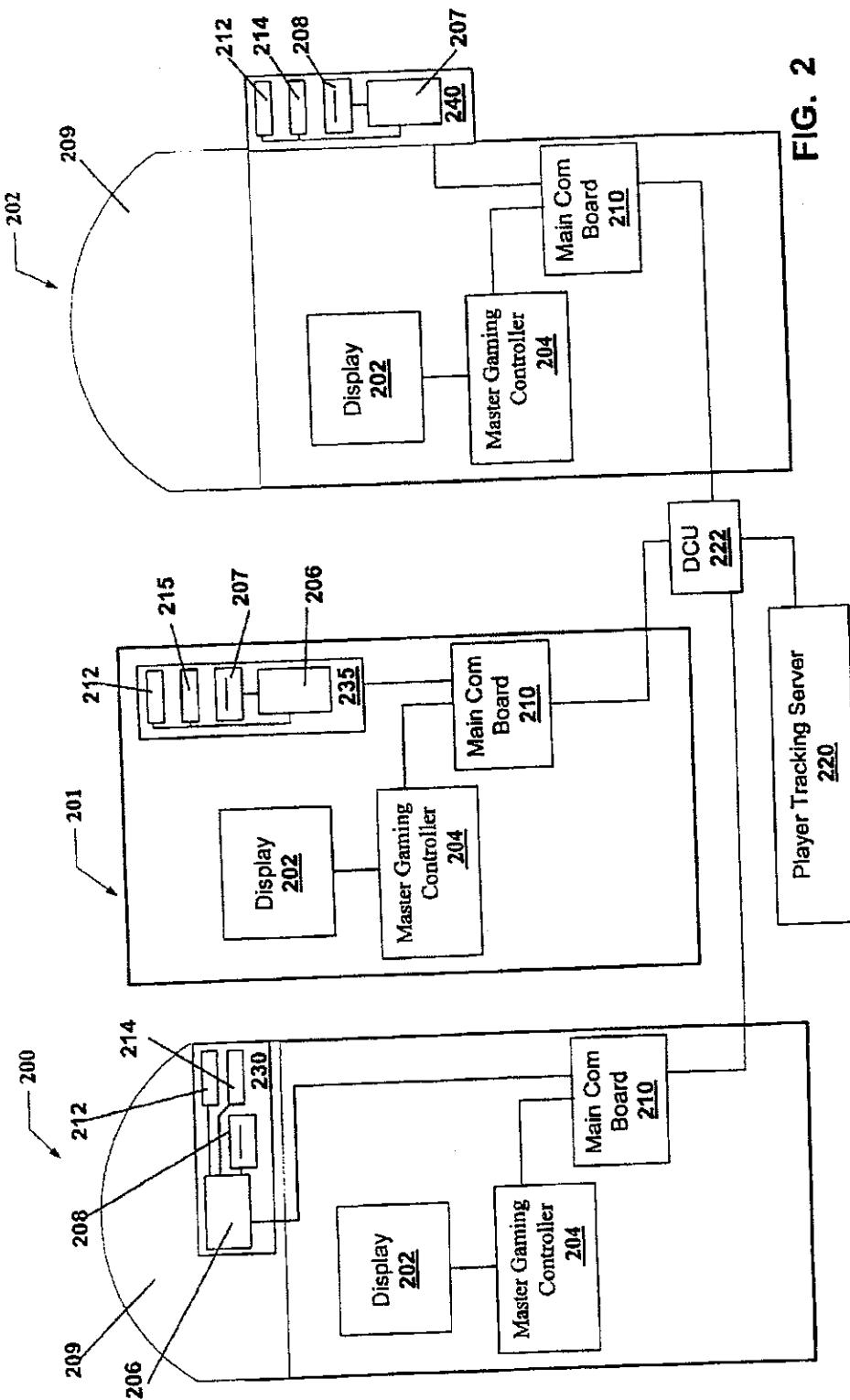


FIG. 2

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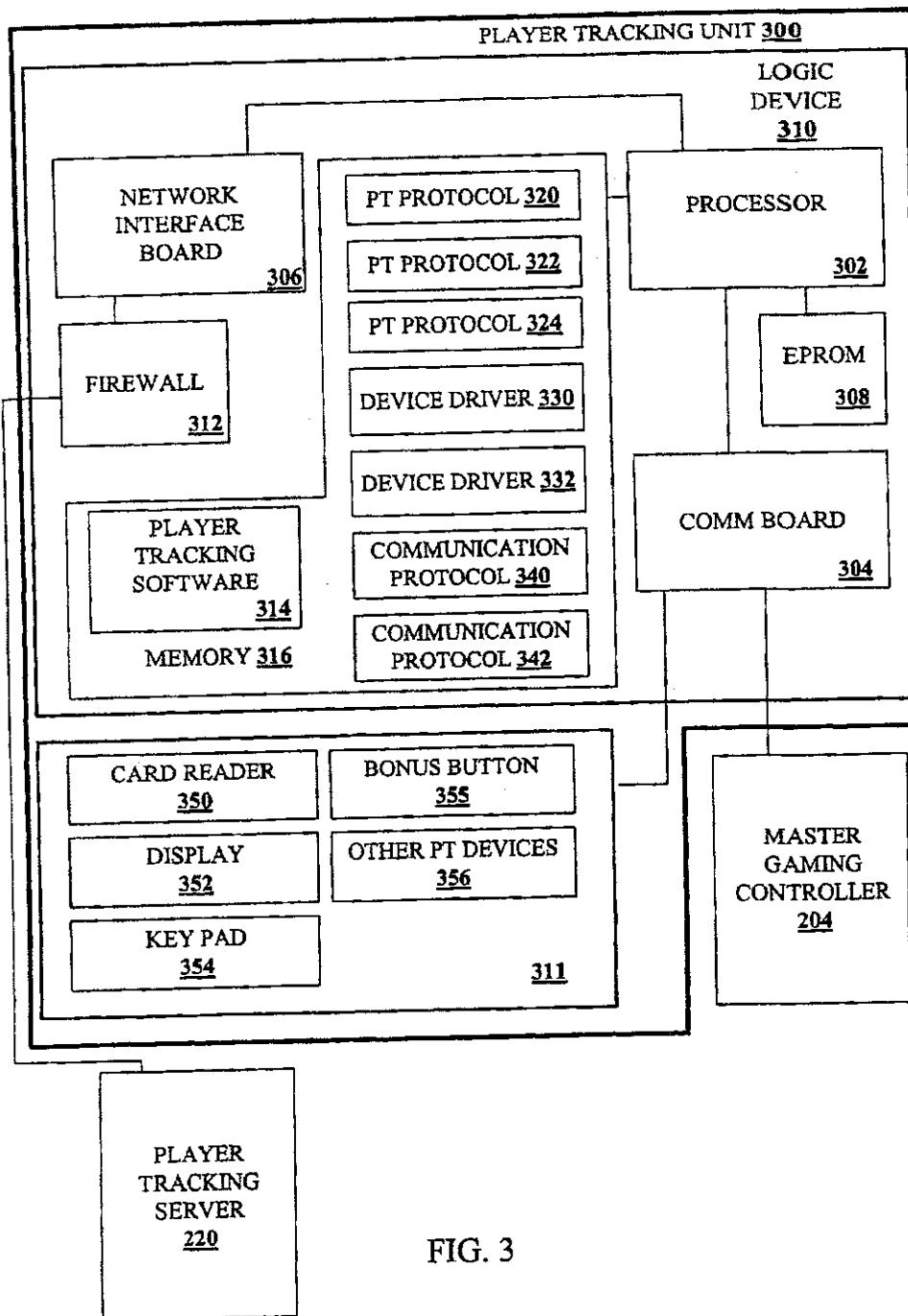


FIG. 3

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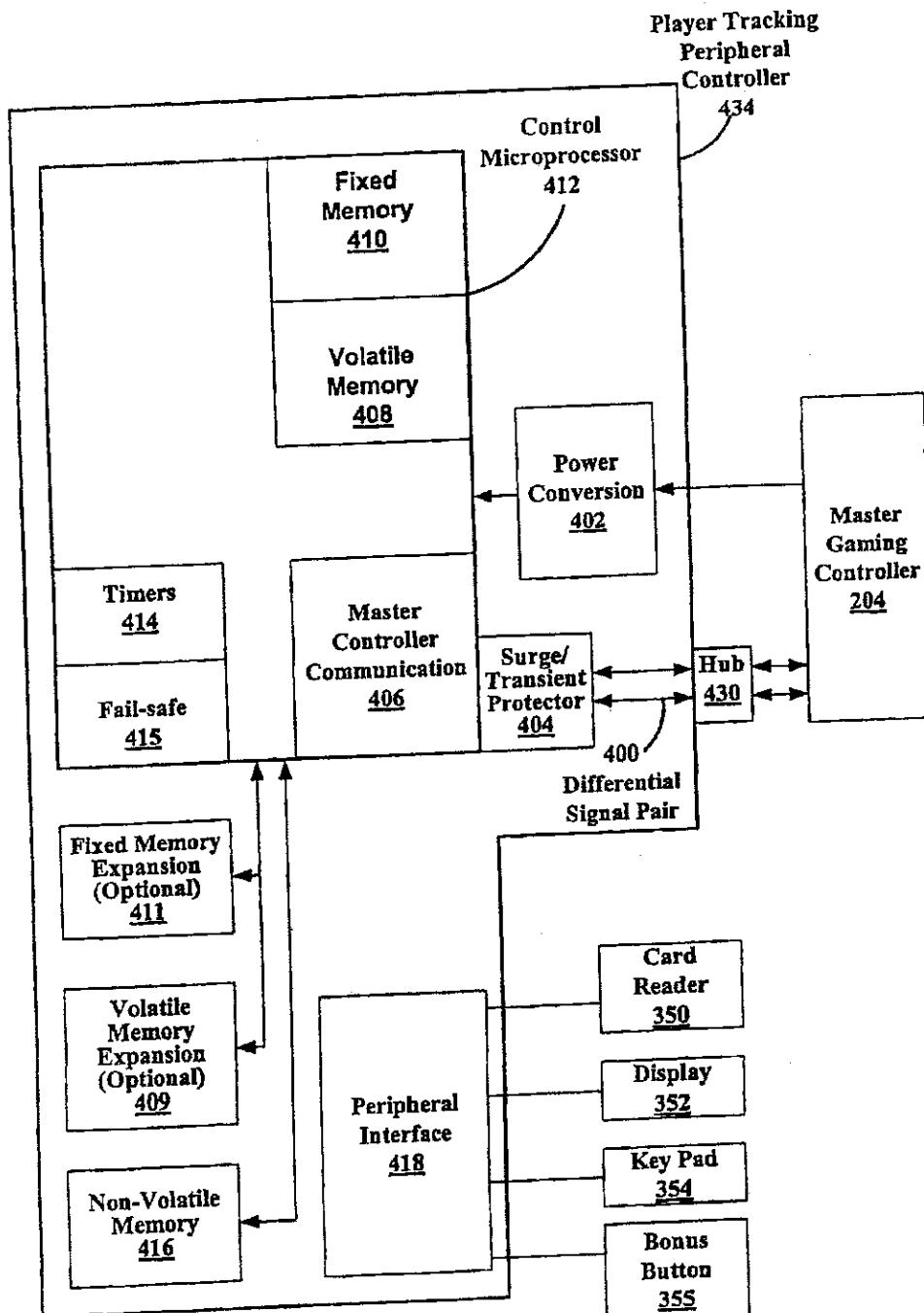


FIG. 4

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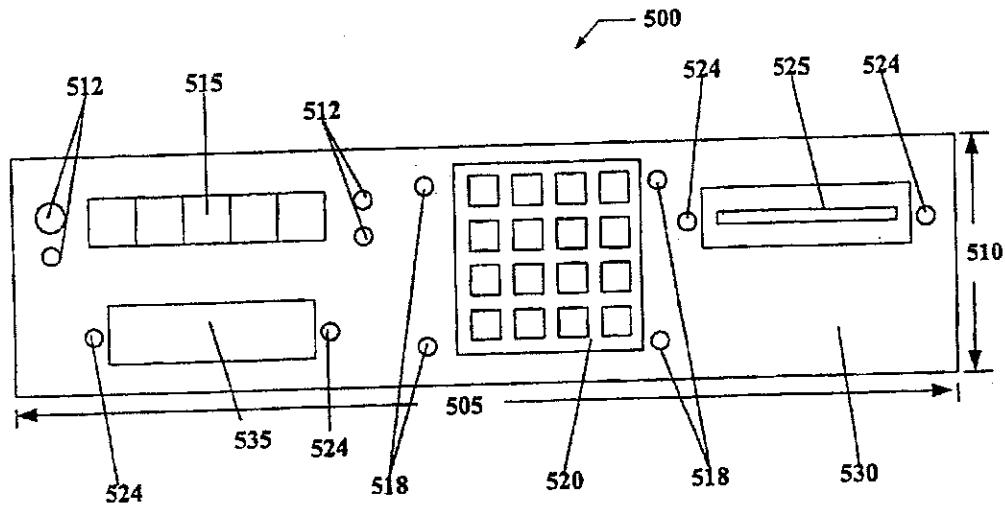


FIG. 5A

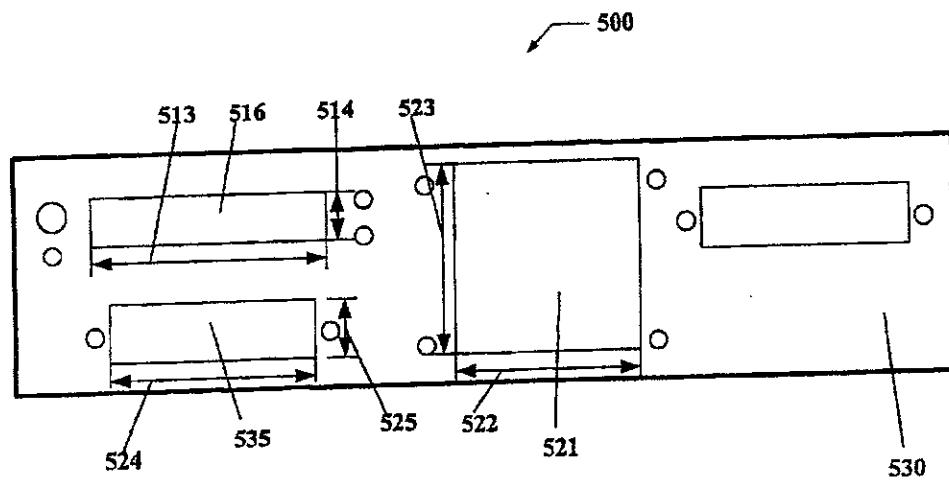


FIG. 5B

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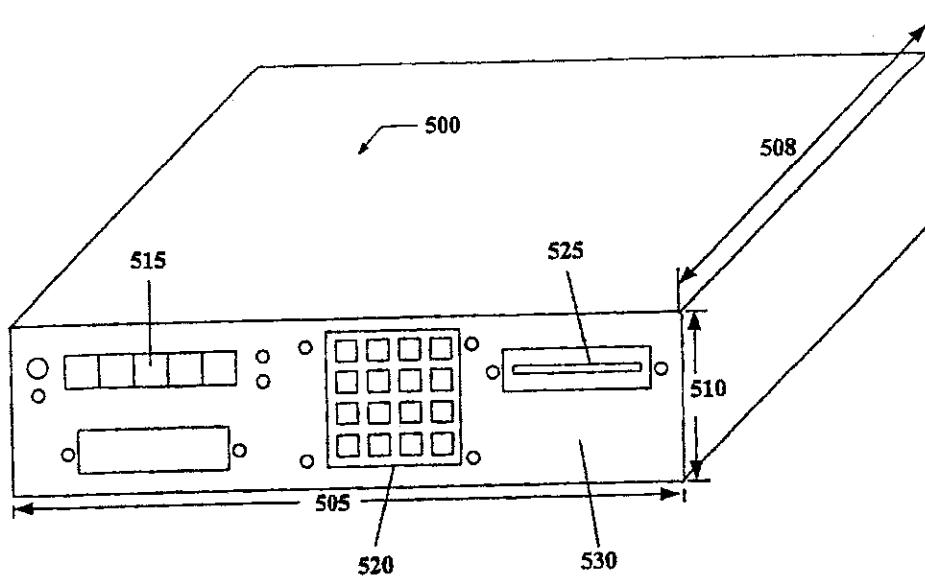


FIG. 5C

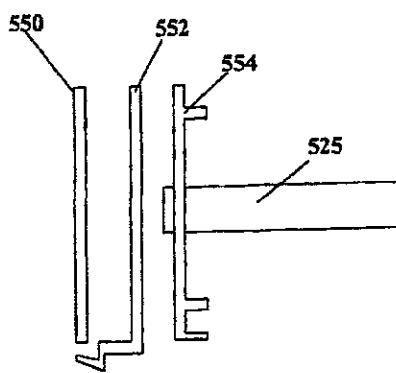


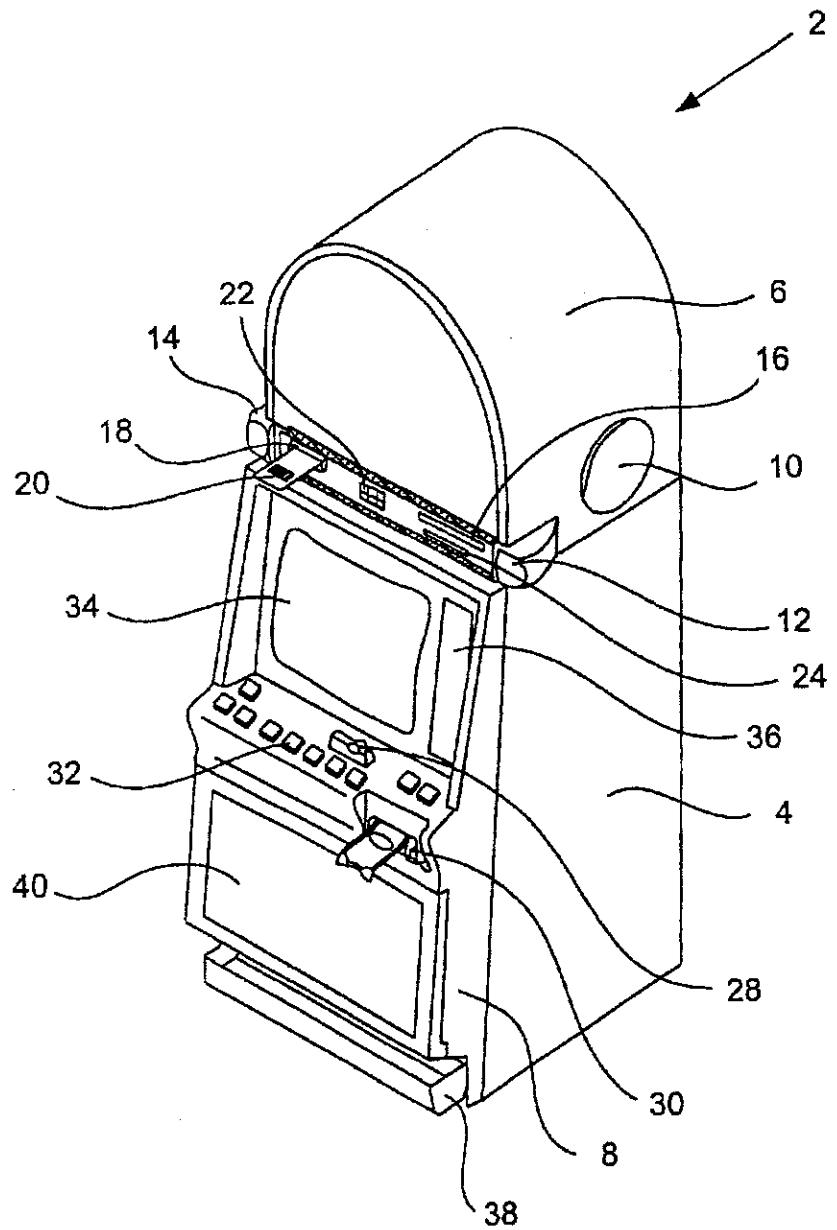
FIG. 5D

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**FIG. 6**

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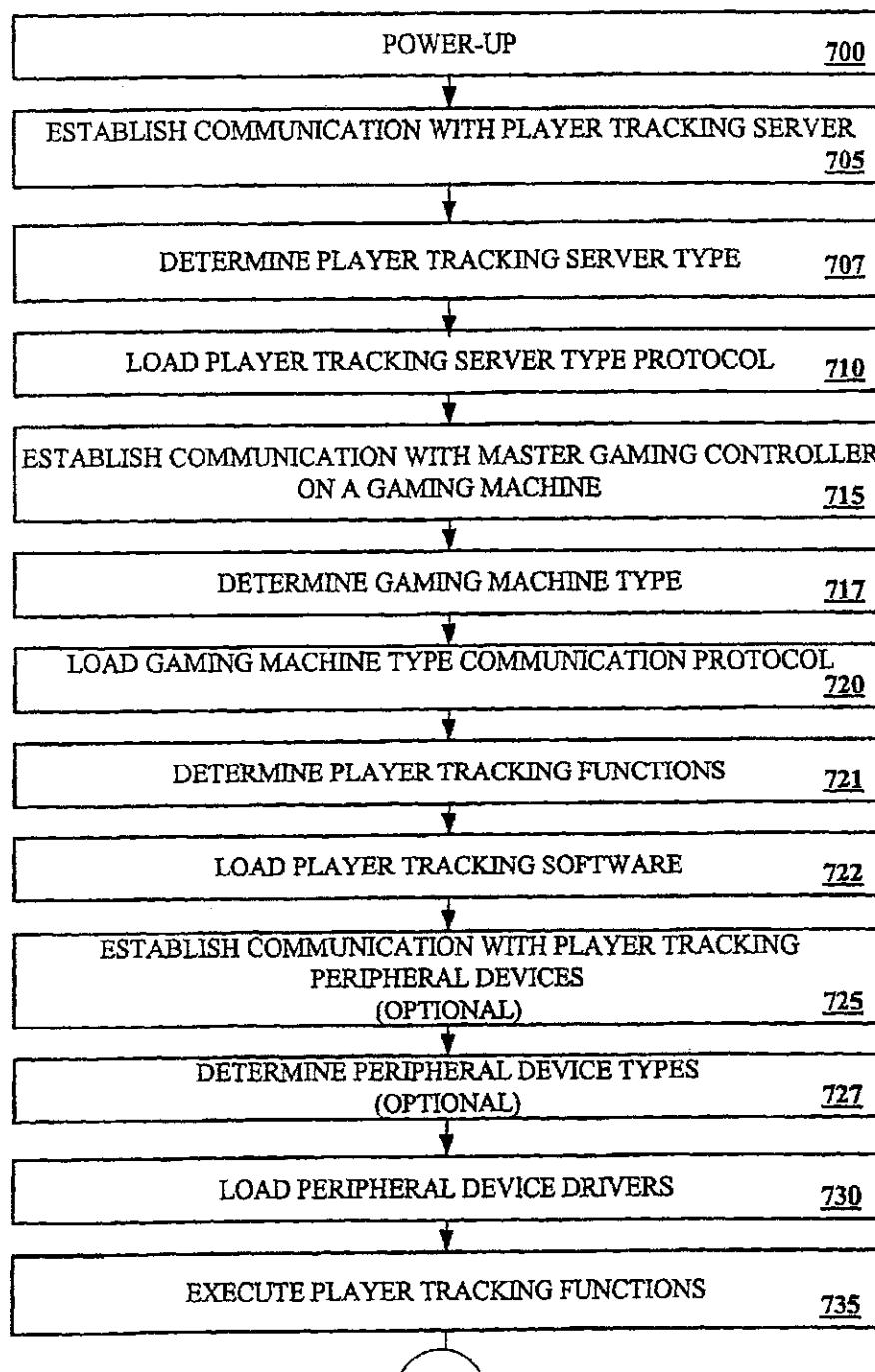


FIG. 7

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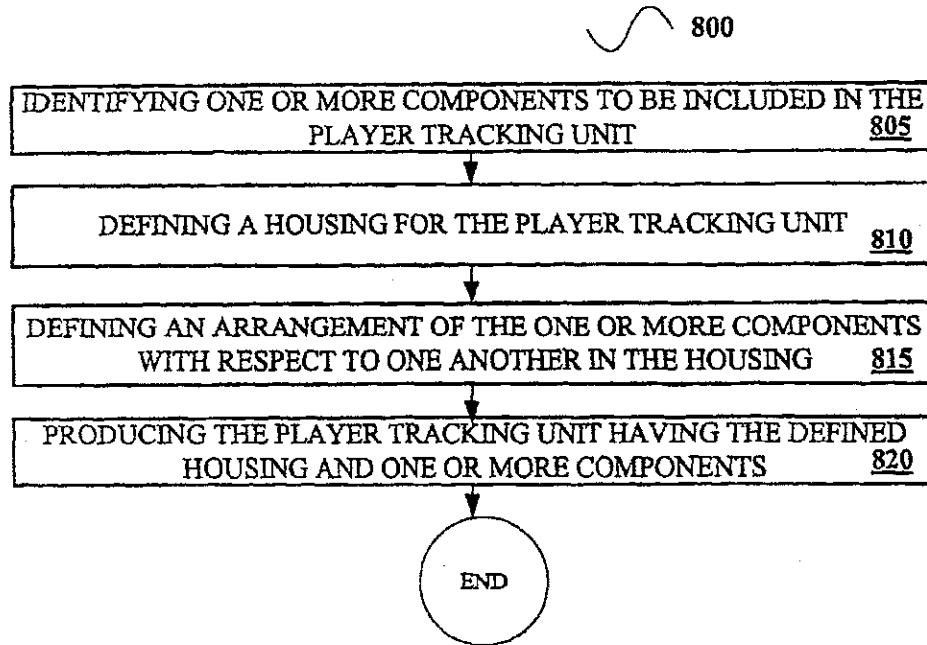


FIG. 8

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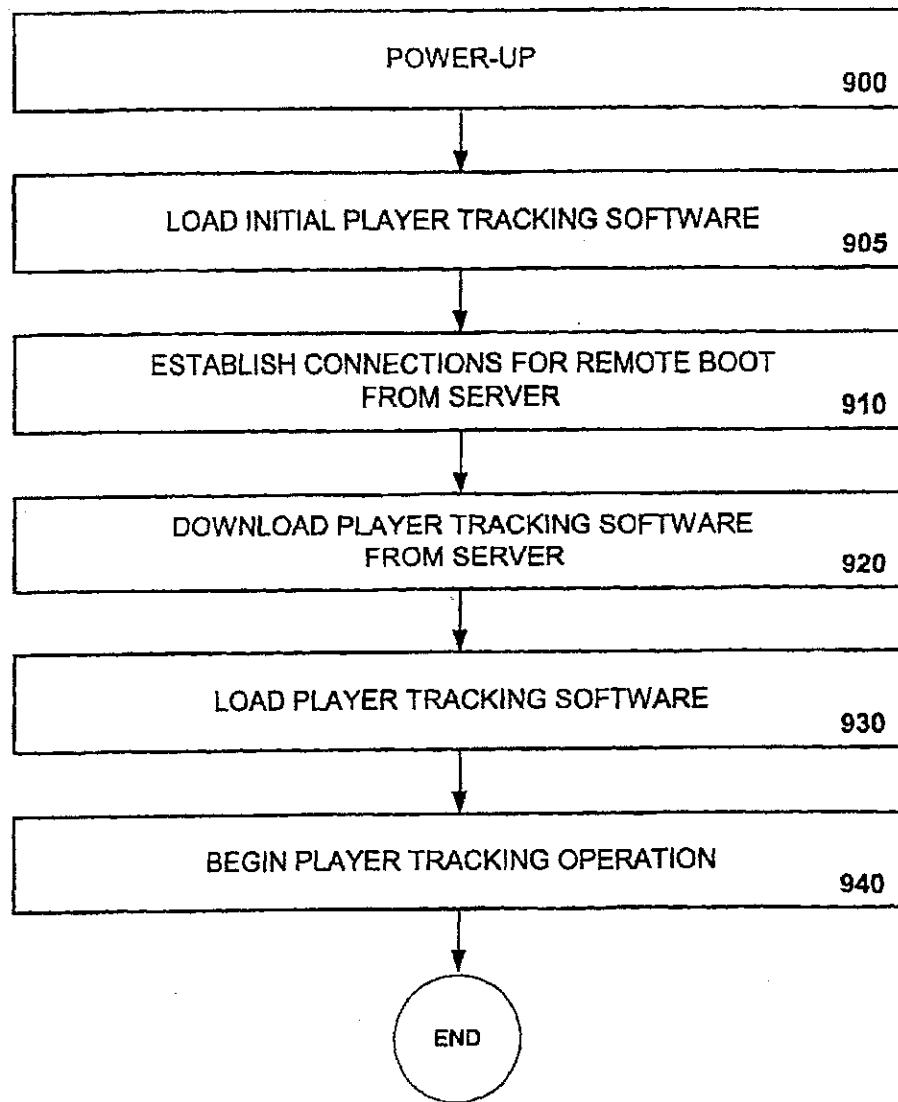


FIGURE 9

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**UNIVERSAL PLAYER TRACKING SYSTEM****CROSS REFERENCE TO RELATED U.S.  
PATENT APPLICATIONS**

This application is related to U.S. patent application Ser. No. 09/414,659 entitled STANDARD PERIPHERAL COMMUNICATION, filed Oct. 6, 1999 and U.S. patent application Ser. No. 09/642,192 entitled GAMING MACHINE VIRTUAL PLAYER TRACKING AND RELATED SERVICES, filed Aug. 18, 2000 each of which is incorporated herein by reference in its entirety for all purposes.

**BACKGROUND OF THE INVENTION**

This invention relates to game playing services for gaming machines such as slot machines and video poker machines. More particularly, the present invention relates to methods of providing player tracking game services to casinos and game players.

There are a wide variety of associated devices that can be connected to a gaming machine such as a slot machine or video poker machine. Some examples of these devices are player tracking units, lights, ticket printers, card readers, speakers, bill validators, ticket readers, coin acceptors, display panels, key pads, coin hoppers and button pads. Many of these devices are built into the gaming machine or components associated with the gaming machine such as a top box which usually sits on top of the gaming machine.

Typically, utilizing a master gaming controller, the gaming machine controls various combinations of devices that allow a player to play a game on the gaming machine and also encourage game play on the gaming machine. For example, a game played on a gaming machine usually requires a player to input money or indicia of credit into the gaming machine, indicate a wager amount, and initiate a game play. These steps require the gaming machine to control input devices, including bill validators and coin acceptors, to accept money into the gaming machine and recognize user inputs from devices, including key pads and button pads, to determine the wager amount and initiate game play. After game play has been initiated, the gaming machine determines a game outcome, presents the game outcome to the player and may dispense an award of some type depending on the outcome of the game.

For gaming machine operators, an important aspect of gaming machine operations is determining the game playing habits of individual game players. When the game playing habits of an individual player are known, the gaming machine operator may provide incentives corresponding to the game playing habits of the individual game player to encourage additional game play. For example, the gaming machine operator may provide an individual player with coupons for free meals, free rooms or discounted game play depending on their game playing habits. The game playing habits of individual game players are typically determined by monitoring game usage on a gaming machine using a player tracking unit. The player tracking unit collects game usage data and player identification information from the gaming machine which is sent to a remote server for archival and analysis purposes.

Currently, player tracking units are usually manufactured as an after-market device separate from the gaming machine. Many different companies manufacture player tracking units as part of player tracking/accounting systems. These player tracking/accounting systems are used in most casinos. While the type of player tracking system varies from casino to

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casino, a particular casino will utilize only one type of player tracking system (i.e. from one manufacturer).

FIG. 1 is a block diagram of two gaming machines, 100 and 101, with player tracking units connected to two servers, 120 and 121, providing player tracking/accounting services. Characteristics of a player tracking accounting/system such as dimensions of the player tracking unit, communication protocols used by the player tracking unit, dimensions and layout of player tracking devices contained in the player tracking unit, connection schemes and mounting of the player tracking unit to the gaming machine, vary from manufacturer to manufacturer. Thus, to illustrate differences among player tracking systems manufactured by different companies and their impact gaming machine design and operation, the gaming machines, 100 and 101, are described with representative features of different player tracking systems.

A first player tracking unit comprising, a device box 107 and slot machine interface board (SMIB) 103, is mounted within the top box 117 on top the main cabinet 118 of the gaming machine 100 with a display 102. On a video gaming machine, a player may view a game presentation on the display 102. A second player tracking unit comprising, a device box 104 and SMIB 103, is mounted the main cabinet 118 of the gaming machine 100. Each player tracking unit 20 utilizes a display, key pad and card reader enclosed within a device housing or chassis of some type, 104 and 107. The devices incorporated in a player tracking unit may vary. Some player tracking units have only a display and a card reader with no key pad, others have a display, a card reader, a key pad and a bonus button, while others have a display, a card reader and a bonus button with no key pad.

Typically, the dimensions of the device housings, 104 and 107, differ among manufacturers. For instance, the frontal area of housing 107 is smaller than 104. Further, the player tracking devices in the device housings, 104 and 107, may be of different sizes, which may affect the dimensions of the device housing such as the depth that the device housing extends into the gaming machine. Also, the layout of the player tracking devices within the device housings and the dimensions of each device may differ. For example, a key pad 115 is wider and longer than a key pad 114 and is located below a card reader 109 while the key pad 114 is located across from the card reader 108.

Many other player tracking unit specifications are also variable. For instance, within each device housing, each of the player tracking devices may be attached to the device housing in a different manner which varies depending on the manufacturer of a particular tracking device. Further, different attachment means may be supplied with each device housing for attaching the player tracking unit to gaming machine which also varies from manufacturer to manufacturer. Also, connection schemes (e.g. pin connectors), cabling and power requirements supplied with each player tracking unit may vary from manufacturer to manufacturer.

Many player tracking units include a separate slot machine interface board (SMIB), such as 103 and 106, which may be mounted in location within the gaming machine which is separate from the device housings, 104 and 107. For instance, in gaming machine 100, the SMIB 106 is mounted within the top box 117 opposite the device housing 107 and in gaming machine 101, the SMIB 103 is mounted within the main cabinet 118 below the device housing 104. Like the device housings, 104 and 107, the dimensions of the SMIBs, 103 and 106, physical attachments and connection schemes, cabling and power requirements may vary depending on the manufacturer of the SMIB.

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The SMIBs, 103 and 106, are used to collect game usage information from the gaming machine (e.g. 100 or 101) which is transmitted to a player tracking/accounting server such as 120 and 121 using a network interface of some type such as the main communication board 110. Via the network interface, the SMIB's may communicate with a data collection unit 116. Each data collection unit (DCU) 116 may be connected to as many as thirty two different SMIBs where each SMIB resides on a different gaming machine. The DCU's consolidate the information gathered from the SMIBs connected to the DCU 116 and forward the information to a player tracking account server such as 120 or 121.

Each type of player tracking/accounting server 120 and 121 and associated player tracking unit may utilize a different communication protocol to communicate game usage information and player tracking information collected by its associated SMIB over the network interface. For instance, player tracking/accounting server 120 and SMIB 103 may use a Slot Accounting System (SAS) protocol provided by IGT (Reno, Nev.) to communicate game usage information while player tracking/accounting server 121 and SMIB 106 may use a Slot Data System (SDS) protocol provided by Bally gaming systems (Las Vegas, Nev.).

To collect gaming information from a gaming machine, the player tracking unit may poll the gaming machine for information. For example, the player tracking unit 120 may poll the master gaming controller 125 to determine how much money the game player has wagered on each game, the time when each game was initiated and the location of the gaming machine. The master gaming controller 104 replies to the information requests from the player tracking unit with the requested gaming information. To the master gaming controller 104, the player tracking unit is a black box. Thus, the master gaming controller does not operate the player tracking unit in any manner. For instance, the master gaming controller does not communicate with or may not send commands to the devices residing in the player tracking unit such as the card readers, 108 and 109, the displays, 112 and 113, or the key pad, 114 and 115.

For gaming machine operators and gaming machine manufacturers, a number of disadvantages arise from the lack of standardization among player tracking units. A first disadvantage is that the variations of the player tracking units from manufacturer to manufacturer add to the complexity of the design of the gaming machine. Currently, there are at least 19 different companies that manufacture player tracking units that may be mounted in a gaming machine. Typically, as described above, each of these companies use different hardware and different communication protocols to design the player tracking unit.

To accommodate gaming machine operators with different player tracking requirements, gaming machine manufacturers design their gaming machines to accommodate as many types of player tracking units as possible. To accommodate player tracking units from different manufacturers custom parts may have to be designed. For instance, custom mounting brackets within the gaming machine 100 may be needed that can accommodate different player tracking mounting hardware from each of the 19 manufacturers of player tracking units. Gathering the information needed to design a particular mounting bracket, designing the part and then repeating it for each manufacturer requires significant resources.

The variation in player tracking units impact gaming machine design in other ways. For instance, the gaming

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machine components within the gaming machine are packaged to allow room for player tracking units and/or data collection units with widely varying dimensions which complicates the design of the gaming machine. As yet another example, the frontal area of each housing is covered with a decorative faceplate consistent with a decorative theme of the particular gaming machine. Thus, a decorative face plate must be designed for each gaming machine that is consistent with the layout, dimensions and mounting requirements for each type of player tracking unit. Often to satisfy the requirements of a particular player tracking unit, a custom installation kit is designed. At the operating location of the casino, the gaming machine operator may install the player tracking units into an assembled gaming machine using the installation kit which adds to the cost of purchasing and installing the gaming machine.

A second disadvantage of current player tracking units is a limited communication capability. Typically, as described above, player tracking units communicate in only one fixed communication protocol to a player tracking accounting server where the communication protocols used by each player tracking unit tend to vary according to the manufacturer of the player tracking unit. Network gaming services, which require communicating ever larger amounts of information, are becoming increasingly important in the gaming industry. The limited communication capabilities of current player tracking units make it difficult for a gaming machine operator to upgrade player tracking services. For instance, to upgrade the communication protocol on an existing player tracking server or to utilize a new player tracking server that utilizes a more efficient communication protocol to transfer gaming information, a casino operator might have to replace expensive player tracking units in all of its gaming machines to enable communications with the new player tracking server. When completed, only one model of many would have the enhanced capability and the same effort would need to be repeated for many various models of player tracking units.

A third disadvantage of separate hardware player tracking units is that the devices utilized by the player tracking unit, such as the displays, 112 and 113, the key pads, 114 and 115, and card readers, 108 and 109, are not accessible to the master gaming controllers, 104, within the gaming machines, 100 and 101. Thus, for example, the master gaming controller can not use the card reader (e.g. 108 or 109) for other gaming applications requiring a card reader. Therefore, if a gaming application executed on the gaming machine requires a card reader, a second card reader may have to be installed on the gaming machine. Since one card reader may be sufficient for use in multiple gaming applications, the installation of a second card reader may be very inefficient.

In view of the above, it would be desirable to provide a less expensive, less complicated and more efficient methods and apparatus of providing player tracking services for a gaming machine.

## SUMMARY OF THE INVENTION

This invention addresses the needs indicated above by providing a player tracking unit with a memory arranged to store a plurality of different communication protocols allowing the player tracking unit to communicate with a plurality of different types of gaming machines and a plurality of different types of player tracking servers. The software on the player tracking unit may be designed or configured to accommodate new player tracking features such as new

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communication protocols. The player tracking unit may contain many different types of player tracking peripheral devices such as card readers, key pads, displays, bonus buttons and biometric input mechanisms. The peripheral devices contained in the player tracking unit may be accessible to the master gaming controller on a gaming machine and may be utilized by the master gaming controller for other gaming applications. The player tracking units may use standard components allowing the player tracking unit to fit in many different types of gaming machines with minimal modifications to the player tracking unit or the gaming machine.

One aspect of the present invention provides a player tracking unit. The player tracking unit may be generally characterized as including: 1) one or more of the following peripheral devices: a card reader, a display, a key pad, a bonus button and a biometric input device; 2) a logic device designed or configured a) to collect player tracking information from the peripheral devices, b) to collect accounting information from a master gaming controller on a gaming machine and c) to send the player tracking information and the accounting information to a player tracking server; and 3) a memory arranged to store a plurality of different communication protocols allowing the logic device to communicate with a plurality of different types of gaming machines using different communication protocols to communicate with the player tracking unit and a plurality of different types of player tracking servers using different communication protocols to communicate with the player tracking unit. The memory may be also arranged to store a plurality of device drivers for each type of peripheral device.

In particular embodiments, the player tracking unit may employ a standard housing for enclosing the logic device and the peripheral devices which is designed or configured to fit in one of a plurality of different types of gaming machines where the standard housing may conform to at least one of standard dimensions and a standard layout of the peripheral devices. The player tracking unit may also employ a number of different standard mounting means designed or configured to mount a) one of a plurality of different types of card readers in the player tracking unit b) one of a plurality of different types of displays in the player tracking unit and c) one of a plurality of different types of key pads in the player tracking unit. In addition, a standard device housing which is separate from the logic device housing and which is designed or configured to fit in one of a plurality of different types of gaming machines and enclose the one or more peripheral devices, may be used for the player tracking unit where the standard device housing conforms to at least one of standard dimensions and a standard layout for the peripheral devices. Further, a standard logic device housing which is separate from the logic device housing and which is designed or configured to fit in one of a plurality of different types of gaming machines and enclose the logic device, may be used for the player tracking unit.

In particular embodiments, the player tracking unit may also include a) a network interface where the network interface is a wireless interface or a wired interface and b) a firewall. The card reader may be designed or configured to read a smart card or write to the smart card and the biometric input device may be a finger print device. Further, the logic device may be a microcontroller or a microprocessor.

In a specific embodiment, the player tracking unit may include a peripheral communications connection where the logic device is designed or configured to communicate with the master gaming controller via the peripheral communica-

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cation connection using a standard communication protocol where the standard communication protocol may be USB. Further, the logic device may be designed or configured to receive from the master gaming controller operation instructions for one or more peripheral devices. The player tracking unit may also include a hub connected to the peripheral communications connection and containing a plurality of peripheral communications connections.

Another aspect of the present invention provides a gaming machine with a player tracking unit. The gaming machine may be generally characterized as including 1) a master gaming controller designed or configured to control one or more games on the gaming machine and 2) a player tracking unit comprising: a) one or more of the following peripheral devices: a card reader, a display, a key pad, a bonus button and a biometric input device; b) a logic device, separate from the master gaming controller, designed or configured to collect player tracking information from the peripheral devices, to collect accounting information from a master gaming controller on a gaming machine and send the player tracking information and the accounting information to a player tracking server; and c) a memory arranged to store a plurality of different communication protocols allowing the logic device to communicate with a plurality of different types of gaming machines and a plurality of different types of player tracking servers. The game controlled by the master gaming controller may be a video bingo game, a video lottery game, a video black jack game, a video slot game, a mechanical slot game, a video poker game, a video keno game, a video pachinko game, a video game of chance and a video card game. Further, the gaming machine may include mounting means designed to mount a player tracking unit enclosed in a standard housing.

In particular embodiments, the master gaming controller may include a memory arranged to store software that allows the master gaming controller to detect gaming events on the one or more peripheral devices and the logic on the player tracking unit may be designed or configured to receive instructions from the master gaming controller controlling the operation of one or more of the peripheral devices. The gaming machine may also include a peripheral communication connection. Thus, the master gaming controller may include a memory arranged to store software for a communication protocol that allows communication with the player tracking unit via the peripheral communication connection where the communication protocol is USB.

Another aspect of the present invention provides a player tracking gaming peripheral. The player tracking gaming peripheral may be characterized as including: 1) a peripheral communication connection; and 2) a peripheral controller configured or designed to control communications with a master gaming controller in a gaming machine and to receive instructions from the master gaming controller for one or more of the following peripheral devices: a card reader, a display, a key pad, a bonus button and a biometric input device where the instructions from the master gaming controller allow the player tracking gaming peripheral to operate on player tracking events.

In particular embodiments, the player tracking gaming peripheral may include one or more of the following: a) a peripheral interface that directly connects to the one or more peripheral devices, b) hub connected to the peripheral communications connection and containing a plurality of peripheral communications connections, c) a standard housing for the player tracking gaming peripheral designed or configured to fit in one of a plurality of different types of gaming machines wherein the standard housing conforms to at least

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one of standard dimensions and a standard layout of the peripheral devices, d) a standard mounting means designed or configured to mount one of a plurality of different types of card readers in the player tracking gaming peripheral, e) a standard mounting means designed or configured to mount one of a plurality of different types of displays in the player tracking gaming peripheral and f) a standard mounting means designed or configured to mount one of a plurality of different types of key pads in the player tracking gaming peripheral.

In other embodiments, the peripheral controller may include one or more of the following: 1) a control microprocessor, separate from the master gaming controller, designed or configured to communicate over the peripheral communications connection, 2) a non-volatile memory arranged to store at least one of i) configuration parameters specific to the player tracking gaming peripheral and ii) state history information of the player tracking gaming peripheral, 3) a non-volatile memory arranged to store operating code for the gaming peripheral, 4) a memory arranged to store a plurality of device drivers for each type of peripheral device and 5) a memory arranged to store software for a communication protocol that allows communication with the master gaming controller where the communication protocol may be USB.

Another aspect of the present invention provides a gaming machine with a player tracking gaming peripheral. The gaming machine may be generally characterized as including: 1) a master gaming controller designed or configured to control one or more games on the gaming machine; 2) a network interface for communicating with a player tracking server; and 3) a player tracking gaming peripheral, the player tracking gaming peripheral comprising: i) a peripheral communication connection; and ii) a peripheral controller configured or designed to control communications with the master gaming controller and to receive instructions from the master gaming controller for one or more of the following peripheral devices: a card reader, a display, a key pad, a bonus button and a biometric input device wherein the instructions from the master gaming controller allow the player tracking gaming peripheral to operate on player tracking events. In specific embodiments, the gaming machine may include mounting means designed to mount a player tracking gaming peripheral enclosed in a standard housing and the game controlled by the master gaming controller may be a video bingo game, a video lottery game, a video black jack game, a video slot game, a mechanical slot game, a video poker game, a video keno game, a video pachinko game, a video game of chance and a video card game.

In particular embodiments, the master gaming controller may include one or more of the following: a) a memory arranged to store software for a standard device identification protocol for the player tracking gaming peripheral and the one or more peripheral devices, b) a memory arranged to store a plurality of device drivers for at least some of each different type of peripheral device, c) software that allows the master gaming controller to detect gaming events on the one or more peripheral devices where the gaming event is a player tracking event, d) software for a communication protocol that allows communication with the player tracking gaming peripheral via the peripheral communication connection where the communication protocol is USB and e) a plurality of different types of communication protocols allowing the gaming machine to communicate with a plurality of different types of player tracking servers. The master gaming controller may be designed or configured to

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send player tracking information and accounting information using the network interface to the player tracking server to receive player tracking information from the player tracking server using the network interface where the network interface is a wireless interface or a wired interface.

Another aspect of the present invention provides a method of initializing a player tracking unit on a gaming machine. The method may be generally characterized as including: 1) establishing communications with a player tracking server; 2) loading a player tracking protocol for communicating with the player tracking server from among a plurality of different player tracking protocols; 3) establishing communications with a master gaming controller on a gaming machine; 4) loading a gaming machine protocol for communicating with a master gaming controller on the gaming machine from among a plurality of different gaming machine protocols; and 5) performing one or more player tracking functions. In addition, the method may include one or more of the following: a) sending the gaming information to the player tracking server, b) determining the player tracking server type, c) determining the gaming machine type and d) determining one or more peripheral device types.

Another aspect of the present invention provides a method of designing and producing a player tracking unit for installation in a gaming machine. The method may be generally characterized as including 1) identifying one or more components to be included in the player tracking unit; 2) defining a housing for the player tracking unit, which housing is designed having dimensions conforming to dimensions specified in a standard for player tracking units in gaming machines; and 3) producing the player tracking unit having the defined housing and one or more components where the player tracking unit may be an after market unit for the gaming machine. In addition, the method may include defining an arrangement of the one or more components with respect to one another in housing, wherein the arrangement conforms to said standard for player tracking units in gaming machines.

These and other features of the present invention will be presented in more detail in the following detailed description of the invention and the associated figures.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram of gaming machines with player tracking units connected to two servers providing player tracking/accounting services.

FIG. 2 is a block diagram of gaming machines with player tracking units of the present invention connected to a player tracking/accounting server.

FIG. 3 is a block diagram of player tracking unit of the present invention connected to a master gaming controller on a gaming machine and a player tracking server.

FIG. 4 is a block diagram of a player tracking peripheral controller connected to a master gaming controller on a gaming machine and a plurality of player tracking devices.

FIGS. 5A-C are front and perspective diagrams of a player tracking unit of the present invention.

FIG. 5D is a mounting system for attaching a card reader to a player tracking unit of the present invention.

FIG. 6 is perspective drawing of a gaming machine with a player tracking unit of the present invention.

FIG. 7 is a flow chart depicting a method for initializing a gaming machine with a player tracking unit of the present invention.

FIG. 8 is a flow chart depicting a method for designing and producing a player tracking unit for installation in a gaming machine.

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FIG. 9 is a flow chart depicting a method of configuring a player tracking unit from a remote server.

## DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. 2 is a block diagram of gaming machines with embodiments of player tracking units of the present invention connected to a player tracking/accounting server. A player tracking unit, 230, is located within a top box 209 mounted on gaming machines. A player tracking unit 235 is located within a main cabinet of gaming machine 201. A player tracking unit 240 is mounted on a side of a main cabinet of gaming machine 202. The gaming machines 200, 201 and 202 each contain a display 202, a master gaming controller 204 and a main communication board 210. The main communication board 210 provides an interface between a SMIB 206 or a peripheral controller 207 and the master gaming controller 204. Also, the main communication board provides an interface between the SMIB 206 or the peripheral controller 207 and a data collection unit 222 connected to a player tracking/accounting server 220 which provides player tracking and accounting services to each of the gaming machines, 200, 201 and 202. The operation of the player tracking units in the context of game play on the gaming machines is described with reference to FIG. 6.

In FIG. 2, the player tracking units 230, 235 and 240 communicate with the master gaming controller 204 and the data control unit 222 connected to the player tracking server 220 via the main communication board 210. The present invention may be employed with many different connection schemes between the player tracking unit, master gaming controller, data collection unit and player tracking/accounting server and is not limited to the example shown in FIG. 2. For instance, the player tracking unit 230 may be directly connected to the master gaming controller 204 bypassing the main communication board 210. In another example, the player tracking unit 230 may be connected directly to a master gaming controller 204 and directly to a data collection unit 222 without using a main communication board 210. In addition, other data collection elements (not shown) such as a translator may be used to gather player tracking information from the gaming machines.

The master gaming controllers, 204, control one or more games played on the gaming machine that are displayed on display 202. The gaming machines that may use the player tracking units of the present invention are not limited to video gaming machines and may be used with many types of pre-existing and future gaming machines. For instance, the gaming machines may be upright gaming machines, slant top gaming machines and bar top gaming machines providing video games of chance, mechanical slot games and combinations of video and mechanical games as well as bonus games. Games that may be played on the gaming machine with a player tracking unit of the present invention include a video bingo game, a video lottery game, a video black jack game, a video slot game, a mechanical slot game, a video poker game, a video keno game and a video pachinko game. The gaming machines may or may not include top boxes. For example, the player tracking units, 230 and 240, are located within top boxes, 209, mounted on top of gaming machines 200 and 202 while the player tracking unit 235 is located within the main cabinet of gaming machine 201.

The player tracking units, 230, 235 and 240, each include three player tracking devices, a card reader 208, a display 212 and key pad 214. The card reader 208 may read or write

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to smart cards and/or read to magnetic striped cards. The player tracking units may incorporate other types of gaming devices such as bonus buttons, lighted displays, lights, sound devices (e.g. speakers), and biometric input devices. For instance, the biometric input device may be a finger print reader, a microphone or a retina scanner. The microphone and speakers may also be used for voice recognition applications.

The player tracking units are not limited to these gaming devices and many different combinations of player tracking devices using many different types of player tracking devices may be used with the player tracking units of the present invention. For example, on some gaming machines, the display screen 202 may be used to input player tracking information and the display 212 and key pad 214 may be eliminated. A detailed description of an embodiment of a player tracking unit using a touch screen on the gaming machine to enter player tracking information is described in co-pending U.S. patent application Ser. No. 09/642,192 entitled GAMING MACHINE VIRTUAL PLAYER TRACKING AND RELATED SERVICES, filed Aug. 18, 2000 which is incorporated herein in its entirety and for all purposes.

The device logic for performing player functions may be distributed between the player tracking unit and the master gaming controller on the gaming machine. Therefore, a logic device within the player tracking unit, such as microcontroller or a microprocessor, may execute player tracking software for some or all of player tracking functions available on the player tracking unit. Some examples of player tracking functions may include 1) communicating with a player tracking/accounting server, 2) polling a gaming machine for game usage information, 3) operating player tracking devices such as the card reader 208 and 4) sending information to the player tracking devices (e.g. displaying a message on display 212 or writing information to a smart card inserted in card reader 207). For current player tracking units, a logic device within the player tracking unit which is separate from the master gaming controller on the gaming machine, typically executes player tracking software enabling all of the player tracking functions available on the player tracking unit. Thus, when player tracking units of the present invention are installed in an older gaming machine, all of the player tracking functions may be executed by a logic device within the player tracking unit such as the SMIB 206 or the peripheral controller 207. However, on newer gaming machines or modified older gaming machines, the player tracking functions may be distributed between logic devices located on the player tracking unit, master gaming controller or even external gaming devices such as a smart card. A few embodiments of logic devices of the present invention are described with reference to FIGS. 3 and 4.

On newer gaming machines, the master gaming controller may be configured to perform some or all of the player tracking functions. For example, the gaming machines, such as 200, 201 and 202, may transmit game usage information directly to the player tracking server 220 via the main communication board 210 bypassing the player tracking units, 230, 235 and 240. In this example, the player tracking unit may disable polling capabilities available on the player tracking unit when this player tracking function is performed by the master gaming controller on the gaming machine. In one embodiment, when the player tracking unit is initialized, it may automatically configure itself with a particular set of player tracking functions after contacting the master gaming controller on the gaming machine and/or a remote server

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such as a player tracking/accounting server. In another embodiment, the player tracking unit may configure itself by reading a configuration file stored in a memory location on the player tracking unit. The player tracking unit may also be configured by a gaming machine operator. When all of the player functions are performed by the master gaming controller 204, the player tracking devices such as the card reader 208, the display 212 and the key pad 214 may be operated in a manner similar to other gaming devices connected to a gaming machine such as bill validators, lights, input buttons, displays, etc.

For the player tracking units 230, 235 and 240, a logic device in each player tracking unit may be configured to perform a number of player tracking functions. For instance, the SMIBs, 206, which contain a logic device, may allow the player tracking units to collect player tracking information from the player tracking peripheral devices (e.g., the card reader 208, the display 212, and the key pad 214), 2) collect gaming information such as game usage information from a master gaming controller on the gaming machine, 3) to send player tracking/player tracking information to a remote player tracking/accounting server (e.g. 220) and 4) sending information to the player tracking devices (e.g. displaying a message on display 212 or writing information to a smart card inserted in card reader 207). Further, each player tracking unit may contain a memory arranged to store a) a plurality of different communication protocols for communicating with master gaming controllers on different types of gaming machines, b) a plurality of different communication protocols to communicate with different types of player tracking/accounting servers and c) a plurality of different device drivers allowing logic device to communicate with various types of player tracking devices as well as to operate these devices.

As an example, a memory on the player tracking units (e.g. 230, 235 and 240) may store or may be easily updated to store a first communication protocol for a first type of player tracking server manufactured IGT (Reno, Nev.), a second communication protocol for a second type of player tracking server manufactured by Bally Gaming systems (Las Vegas, Nev.) and a third communication protocol for a third type of player tracking server manufactured by Acres gaming (Las Vegas, Nev.). Thus, in this example, the player tracking units, 230, 235, 240, of the present invention, may be configured to communicate with the three types of player tracking servers above, as well as many other types of player tracking servers without replacing the player tracking hardware. Therefore, a player tracking unit with a memory storing communication protocols for different types of gaming machines may be installed in a gaming machine in a first casino using a first type of player tracking server or in a gaming machine in a second casino using a second type of player tracking server. An advantage of player tracking units that may communicate with many types of player tracking servers is that a gaming machine operator, maintaining a number of gaming machines connected to a particular type of player tracking server, may change the type of player tracking server by reconfiguring software on each of the player tracking units and avoid replacing all of the player tracking hardware units in each gaming machine.

As another example, a memory on the player tracking units (e.g. 230, 235 and 240) may store or may be easily updated to store communication protocols allowing the player tracking to communicate with master gaming controllers on a number of different types of gaming machines such as gaming machine manufactured by IGT, Bally gaming systems and Acres gaming. Thus, each player tracking

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units may be configured to operate with a particular type of gaming machines by loading a communication protocol from the memory allowing the player tracking unit to communicate with the master gaming controller of the particular type of gaming machine. In addition to changing the communication protocol software to install the player tracking unit in different types of gaming machines, connection hardware, such as cabling and pin connectors, in the player tracking unit may have to be modified to enable communications between the master gaming controller and the player tracking units. In some embodiments of the present invention, a standard communication connection and communication is employed in the player tracking unit to simplify the connection process. An example of a standard connection scheme and communication protocol for a gaming machine such as USB is described U.S. patent application Ser. No. 09/414,659 entitled STANDARD PERIPHERAL COMMUNICATION, filed Oct. 6, 1999 which is incorporated in its entirety and for all purposes. In addition, some details of a standard connection scheme and standard communication protocol are described with respect to FIG. 4.

In one embodiment of the present invention, generic application program interfaces (API) necessary for a player tracking server, such as 220, to communicate and operate with a player tracking unit, such as 230, 235 and 240 or other gaming devices performing player tracking functions to communicate and operate with one another may be used. API's let application programmers use functions of a computer and an operating system without having to directly keep track of all the details in the CPU's operation. Typically, the API's describe all of key transactions and associated processing necessary to perform a particular function. For example, player tracking functions such as polling of gaming machine for accounting information may be described as part of one or more generic player tracking APIs. An API may be considered analogous to a device driver in that it provides a way for an application to use a hardware subsystem without having to know every detail of the hardware's operation.

A generic mark-up language may be used to describe player tracking APIs and player tracking transaction definitions involving two or more of the logic devices in a gaming system performing player tracking functions. For instance, logic devices used to perform player tracking functions in the gaming system may be located in the player tracking unit (e.g. 230, 235, 240), in the master gaming controller of a gaming machine (e.g. 204), in the player tracking server (e.g. 204) as well as in associated peripheral devices such as but not limited to card reader (e.g. 208), a personal digital assistant, a cell phone or a smart card. A mark-up language may be used to describe each transaction to and from the player tracking unit and to and from the player tracking server according to the API's for each device. Further, the mark-up language may be extended to describe transactions between a plurality of logic devices performing player tracking functions according to the API's for each logic device such as but not limited to between: 1) a smart card and a player tracking server, 2) a smart card and a player tracking unit, 3) a personal digital assistant and player tracking server, 4) a personal digital assistant and player tracking unit, 5) a master gaming controller and a player tracking unit, 6) a master gaming controller and a player tracking server, etc.

In general, a mark-up language may be used to add instructions to information content that tells a device receiving the information content what to do with the information

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content. For example, the mark-up language may specify a format for displaying information content when it is received by a gaming device. Hyper text mark-up language (HTML) is one example of a mark-up language. Other examples of mark-up languages that may be used with the present invention, include but are not limited to XML (extensible markup language), Wireless Mark-up Language (WML), and hand-held device markup language (HDML). Multiple mark-up languages may be used in a gaming system to define different player tracking APIs. For instance, XML may be used to communicate with certain gaming devices, such as player tracking units, while HDML may be used to communicate with other gaming devices such as personal digital assistants or other hand held devices.

An advantage of using a mark-up language to describe one or more player tracking application program interfaces is that it may allow outside vendors to develop player tracking software. In the past, player tracking software and player tracking protocols have been typically kept proprietary. The proprietary nature of the software and protocols makes it difficult for outside software vendors to develop player tracking applications.

In one embodiment of the present invention, portions of the player tracking software may designed to be executed on different types of logic devices performing player tracking functions. For example, the player tracking software may include but is not limited to an operating system, one or more application program interfaces, one or more player tracking communication protocols and a plurality of player tracking applications. The player tracking software may be designed to allow a player tracking unit such as 230 or 235 or the master gaming controller 204 to execute an essentially identical set of player tracking software components including the operating system, communication protocols, application program interfaces and player tracking applications. All of the player tracking software components do not have to be compatible with a plurality of different logic devices. Some of the player tracking software components may be logic device specific. For instance, in some embodiments, two different logic devices performing player tracking functions such as a logic device on the player tracking unit 230 and the master gaming controller 204 may execute the same player tracking software applications using two different operating systems.

Traditionally, the communication between the player tracking unit and the master gaming controller has been to allow the player tracking unit to poll the master gaming controller for game usage information and to receive game usage information from the master gaming controller. However, in the past, the master gaming controller has not operated player tracking devices in the player tracking unit such as the card reader 208, the display 212 and the key pad 214. In the present invention, the communication interface between the master gaming controller and the player tracking unit may be configured to allow the master gaming controller to operate one or more of the player tracking devices. An advantage of this configuration is that the player tracking devices may be utilized to provide gaming services other than player tracking gaming services. For instance, the card reader 208 may be used with a magnetic striped card or a smart card as part of a cashless award system, to configure a gaming machine according to a player's preferences or as part of a bonusing system.

As another example, a memory within the player tracking units, such as 230, 235 and 240, may also store a plurality of device drivers for different types of player tracking devices. For instance, device drivers for a plurality of card

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readers may be stored within the player tracking unit so that one type of card reader may be exchanged for another type of card reader in the player tracking unit with minimal modifications to the player tracking unit. A card reader may be replaced in the player tracking unit for a number of reasons such as for maintenance purposes (e.g. to replace a damaged card reader) or to upgrade the card reader.

The one or more memories within the player tracking units storing communication protocols and device drivers may be configured to allow additional communication protocols and device drivers to be added or modified. For example, the player tracking unit may contain a CD/DVD drive that reads a CD/DVD containing many different communication protocols and many different device drives. Thus, the communication protocols and device drivers may be modified by exchanging the CD/DVD within the drive. In another example, the memory may be a hard drive of some type containing the communication protocols and the device drivers. The communication protocols and device drivers on the hard drive may be updated via a communication interface of some type. For instance, a smart card inserted into a smart card reader in player tracking unit might be used to download new communication protocols and device drivers into the memory. As another example, new communication protocols and device drivers may be downloaded into the memory from the master gaming controller on the gaming machine.

For the player tracking units 230, 235 and 240, logic devices for the player tracking units, such as the SMIB 206 and the peripheral controller 207, are located within a device chassis or device housing which encloses the player tracking devices including the card reader 208, the display 212 and the key pad 214. As described with reference to FIG. 1, the logic devices may be located within a separate logic device housing which is mounted separately from the device housing containing the player tracking devices including the card reader 208, the display 212 and the key pad 214. The logic device housing and the device housing may be configured with standard dimensions that allow the housings to be installed in many different types of gaming machines. In addition, the device housing dimensions and player tracking device dimensions may be selected such that the same device housing and player tracking devices may be used for a vertical or horizontal mounting of the player tracking units. For instance, player tracking unit 230 and 235 may utilize the substantially similar device housing and player tracking devices. An advantage of using device housing and player tracking devices conforming to standard dimensions is that manufacturing and installation costs for the player tracking units may be decreased. Another advantage is that the design of the gaming machine such as the packaging of the game components may be simplified when standard dimensions are used. Details of the device housing dimensions and device layouts are described with reference to FIGS. 5A, 5B, 5C and 5D.

FIG. 3 is a block diagram of an embodiment of a player tracking unit 300 of the present invention connected to a master gaming controller 204 on a gaming machine and a player tracking server 220. The present invention is not limited to the player tracking network shown in the FIG. 3 and other possible elements of a player tracking network such as a data collection units (See FIG. 2) and translators may also be used. The player tracking unit includes a logic device 310 enclosed in a logic device housing and a number of player tracking devices including a card reader 350, a display 352, a key pad 354 and other player tracking devices 356 enclosed in a device housing 311. As described above,

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the logic device 310 for the player tracking unit and the player tracking devices may be enclosed in a single housing (see FIGS. 5A-5D) or separate housings.

The logic device 310 may include a processor for executing software allowing the player tracking unit to perform various player tracking functions such as communicating with the player tracking server 220, communicating with the master gaming controller 204 or operating the various peripheral devices such as the card reader 350, the display 352, the key pad 354 and the bonus button 355. For instance, the logic device 310 may send messages containing player tracking information to the display 352. The logic device 310 may utilize a microprocessor or a microcontroller. In one embodiment, application software for the player tracking unit 300 and configuration information for the player tracking unit may be stored in a memory device such as an EPROM 308, a non-volatile memory, hard drive or a flash memory.

The player tracking unit may include a memory 316 configured to store: 1) player tracking software 314 such as data collection software, 2) player tracking protocols (e.g. 320, 322, 324) allowing the player tracking unit 300 to communicate with different types of player tracking servers, 3) device drivers for many types of player tracking devices (e.g. 330 and 332) and 4) communication protocols (e.g. 340 and 342) such as TCP/IP allowing the player tracking unit to communicate with devices using these protocols or communication protocols allowing the logic device to communicate with different types of master gaming controllers (e.g. master gaming controllers using different types of communication protocols), such as 204. Typically, the master gaming controller, such as 204, communicates using a serial communication protocol. A few examples of serial communication protocols that may be used to communicate with the master gaming controller include but are not limited to USB, RS-232 and Netplex (a proprietary protocol developed by IGT, Reno, Nev.).

A plurality of device drivers may be stored in memory 316 for each type of player tracking device. For example, device drivers for five different types of card readers, six different types of displays and 8 different types of key pads may be stored in the memory 316. When one type of a particular peripheral device is exchanged for another type of the particular device, a new device driver may be loaded from the memory 316 by the processor 302 to allow communication with the device. For instance, one type of card reader in the player tracking unit 300 may be replaced with a second type of card reader where device drivers for both card readers are stored in the memory 316.

In some embodiments, the software units stored in the memory 316 may be upgraded as needed. For instance, when the memory 316 is a hard drive, new device drivers or new communication protocols may be uploaded to the memory from the master gaming controller 204, the player tracking server 220 or from some other external device. As another example, when the memory 316 is a CD/DVD drive containing a CD/DVD designed or configured to store the player tracking software 314, the device drivers and other communication protocols, the software stored in the memory may be upgraded by replacing a first CD/DVD with a second CD/DVD. In yet another example, when the memory 316 uses one or more flash memory units designed or configured to store the player tracking software 314, the device drivers and other communication protocols, the software stored in the flash memory units may be upgraded by replacing one or more flash memory units with new flash memory units storing the upgraded software.

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In one embodiment of the present invention, a minimal set of player tracking software applications 314, communication protocols 340, player tracking communication protocols and device drivers may be stored on in the memory 316. For instance, an operating system, a communication protocol allowing the player tracking unit 300 to communicate with a remote server such as the player tracking server 220 and one or more common player tracking applications may be stored in memory 316. When the player tracking unit is powered-up, the player tracking unit 300 may contact a remote server 220 and download specific player tracking software from the remote software. The downloaded software may include but is not limited to one or more particular player tracking applications that are supported by the remote server, particular device drivers, player tracking software upgrades, and a particular communication protocol supported by the remote server. A method of downloading player tracking software from a remote server to a player tracking unit is described in more detail with respect to FIG. 9.

As described with reference to FIG. 2, in some embodiments, the player tracking functions may be implemented by both the logic device 310 and the master gaming controller 204. Thus, player tracking software such as the player tracking protocols may be stored on a memory located on the gaming machine which is separate from the player tracking unit. In some embodiments, the player tracking software stored on the memory on the gaming machine may be executed by the master gaming controller 204 on the gaming machine in other embodiments, the player tracking software stored on the memory on the gaming machine may be executed by the logic device 310 on the player tracking unit.

The logic device 310 includes a network interface board 306 configured or designed to allow communication between the player tracking unit 300 and other remote devices such as the player tracking server residing on local area networks such as a casino area network or a wide area network such as the Internet. The network interface board 306 may allow wireless or wired communication with the remote devices. The network interface board may be connected to a firewall 312. The firewall may be hardware, software or combinations of both that prevent illegal access of the gaming machine by an outside entity connected to the gaming machine. The internal firewall is designed to prevent someone such as a hacker from gaining illegal access to the player tracking unit or gaming machine and tampering with it in some manner. For instance, an illegal access may be an attempt to plant a program in the player tracking unit that alters the operation of the gaming machine allowing it to perform an unintended function.

The communication board 304 may be configured to allow communication between the logic device 310 and the player tracking devices including 350, 352, 354, 355 and 356 and to allow communication between the logic device 310 and the master gaming controller 204. The communication between the player tracking unit 300 and 1) the player tracking devices, 2) the master gaming controller 204, 3) the player tracking server 220 and 4) any other external or internal gaming devices may be encrypted. In one embodiment, the logic device 310 may poll the player tracking devices for information. For instance, the logic device 310 may poll the card reader 350 to determine when a card has been inserted into the card reader or may poll the bonus button to determine when the bonus button 355 has been depressed. In some embodiments, the player tracking devices may contact the logic device 310 when a player

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tracking event such as a card being inserted into the card reader has occurred.

The logic device 310 may poll the master gaming controller 204 for game usage information. For instance, the logic device may send a message to the master gaming controller 204 such as "coin-in". The master gaming controller may respond to the "coin-in" message with an amount when credits are registered on the gaming machine.

The logic device 310, using an appropriate device driver, may send instructions to the various player tracking devices to perform specific operations. For instance, after a card has been inserted into the card reader 352, the processor logic device may send a "read card" instruction to the card reader and a "display message A" instruction to the display 352. In addition, the logic device 310 may be configured to allow the master gaming controller 204 to send instructions to the player tracking devices via the logic device 310. As an example, after a card has been inserted into the card reader 352, the processor logic 310 may determine that the card is for a gaming application controlled by the master gaming controller 204 and send a message to the master gaming controller 204 indicating a card has been inserted into the card reader. In response, to the message from the logic device, the master gaming controller 204 may send a series of commands to the player tracking devices such as a "read card" instruction to the card reader 350 and a "display message" instruction to the display 352 via the logic device 310. The instructions from the master gaming controller to the player tracking devices may be obtained from gaming application software executed by the master gaming controller 204. The gaming application software may or may not be related to player tracking services.

The player tracking unit 300 may include one or more standard peripheral communication connections (not shown). These connections are described in more detail with respect to FIG. 4. The logic device 310 may be designed or configured to communicate with the master gaming controller 204 using a standard peripheral connection using a standard communication protocol such as USB. The USB standard allows for a number of standard USB connectors that may be used with the present invention. The player tracking unit 300 may contain a hub (see FIG. 4) connected to the peripheral communication connection and containing a plurality of peripheral communication connections.

FIG. 4 is a block diagram of a player tracking peripheral controller 434 connected to a master gaming controller 204 on a gaming machine and connected to a plurality of player tracking devices for one embodiment of the present invention. The peripheral controller 434 is one embodiment of a logic device that allows the master gaming controller to operate the player tracking peripheral devices such as the card reader 350, the display 352, the key pad 354 and the bonus button 355. In one embodiment, the peripheral controller 434 may be integrated into the logic device 310, as described with reference to FIG. 3. The peripheral controller 434 may be enclosed in a standard housing as described with reference to FIGS. 5A-5D.

The master gaming controller 204 is connected to the hub 430, which includes standard communication connections on the gaming peripheral. The peripheral controller 434 is connected to the hub 430 using a peripheral connection 400. The peripheral connection 400 is connected to a transient and surge protector 404. The transient and surge protector 404 protects the peripheral controller from signals arriving on the peripheral connections, which might damage a logic device such as a control microprocessor 412.

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Power from the master gaming controller 204 is transmitted to a power conversion unit 402. The power conversion unit 402 converts the voltage arriving from the master gaming controller 204 to voltages needed for the control microprocessor 412 of the peripheral controller 434 or any of the peripheral devices connected to the peripheral controller 434 including but not limited to the card reader 350, the display 352, the key pad 354 or the bonus button 355. The peripheral devices may also receive power directly from the power supply unit (not shown) with or without using the power conversion unit 402. The power supply unit is usually contained within the main cabinet of the gaming machine.

Hardware needed to connect the peripheral controller 434 to a specific peripheral device is located in the peripheral interface 418. At least one or more peripheral devices are connected to the peripheral interface 418. These peripheral devices may include various player tracking devices such as the card reader 350, the display 352, the key pad 354, bonus button 355 and biometric devices (not shown). The configuration of the peripheral controller 434, which includes information about the types of peripheral devices controlled by the peripheral controller 434, may be stored in a non-volatile memory 416. When the peripheral devices on a gaming peripheral are changed, the non-volatile memory 416 can be replaced or reprogrammed to incorporate the new configuration.

The peripheral controller contains a control microprocessor 412 that controls communication with the master gaming controller 200. Further, the control microprocessor 412 may convert high-level instructions from the master gaming controller 204 requesting specific operations from the peripheral devices controlled by the peripheral controller 434 to low-level instructions needed to perform the operation. The low-level instructions required to operate a specific peripheral device may be stored in device drivers stored in a memory on the peripheral controller 434. In another embodiment, the master gaming controller may send low-level instructions directly to the player tracking peripheral devices. The control microprocessor 412 includes a fixed memory 410, a volatile memory 408, a timer 414, a fail-safe 415, and a master controller communication 406. In other embodiments, either the fixed memory 410 or the volatile memory 408 or both may be located outside of the control microprocessor.

The volatile memory 408 and fixed memory 410 may be upgraded using the volatile memory expansion 409 and the fixed memory expansion 411. The fixed memory expansion 411 might be in the form of an EPROM or flash memory. When flash memory is used, it may be possible to field upgrade the operating code of the peripheral controller. The volatile memory expansion 409 might be in the form of static RAM, which uses a long-life battery to protect the memory contents when power is removed.

Within the control microprocessor 412, the master controller communication 406 controls the communication between the peripheral controller 434 and the master gaming controller 204. The control microprocessor may be an off-the-shelf device including an Infineon Technologies AG (Munich, Germany) C541U family of microcontrollers. The master controller communication 406 performs the communication using a standard communication protocol. Essentially, it implements the protocol associated with a standard communications protocol such as USB, IEEE1394, or the like. The master gaming controller 204 stores software allowing it to communicate in the standard communication protocol used by the peripheral controller 434. The timer 414 sends signals to the control microprocessor 412, which

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controls execution of code. The fail-safe 415 contains code, which is independent of the code in the control microprocessor 412. When code within the control microprocessor 412 is lost or malfunctions, the fail safe 415 will reset the entire gaming peripheral. As an example, the fail safe 415 might expect a message from the control microprocessor 412, which includes "do not reset." When the fail safe 415 receives this message, the fail safe 415 will wait a specified interval for the next "do not reset" message. When the fail safe 415 does not receive a message including "do not reset" after a specified interval, the fail safe 415 resets the gaming peripheral.

The fixed memory 410 is a read only memory, which is not lost when the control microprocessor 412 loses power. The fixed memory 410 stores general code that the control microprocessor 412 uses while operating. To control a specific peripheral device, the control microprocessor 412 uses code stored in the fixed memory 410 in conjunction with peripheral device specific information stored in the non-volatile memory 416. The volatile memory 408 stores code, parameters, data from the peripheral devices and data from the master gaming controller 204 that the control microprocessor 412 needs to operate. The data in volatile memory 408 is lost when the control microprocessor 412 loses power. Critical information including the current state of player tracking peripheral devices (state history information) is stored in the non-volatile memory 416. The non-volatile memory might be an EPROM, flash card memory or a battery powered RAM. In the event of a power failure or some other malfunction, the information in non-volatile memory 416 is used to restore the gaming peripheral to its state before the malfunction occurred. For example, when a player enters cash into the gaming machine, this information can be stored in nonvolatile memory 416 on the peripheral controller 434. After this information is stored in non-volatile memory, it will be available to determine the state of the machine when any subsequent malfunctions occur.

To communicate with the peripheral controller 434, the master gaming controller 204 may include a memory (not shown) arranged to store software for a standard device identification protocol for a player tracking gaming peripheral including the peripheral controller 434. The device identification protocol may also be used for the peripheral devices connected to the player tracking gaming peripheral. The master gaming controller 204 may include a memory arranged to store plurality of device drivers for at least some of each different type of player tracking peripheral device. The master gaming controller 204 may include a memory arranged to store software that allows the master gaming controller to detect gaming events such as "card-in" or "button depressed" on the one or more peripheral devices. The master gaming controller 204 may include a memory allowing it to send high-level or low-level instructions to the peripheral controller 434 for operating a particular player tracking device. In addition, the master gaming controller 204 may include a memory arranged to store a plurality of different types of communication protocols allowing the gaming machine to communicate with a plurality of different types of player tracking servers using different communication protocols.

FIGS. 5A-C are front and perspective diagrams of a player tracking unit of the present invention. FIG. 5A is a front diagram for a housing or chassis 500 enclosing three player tracking devices for one embodiment of the present invention. As described with reference to FIG. 2, the device housing 500 may enclose a logic device configured to

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execute player tracking functions or the logic device may be enclosed in a logic device housing separate from the device housing 500.

The device housing 500 encloses a display 515, a key pad 520 and a card reader 525. In other embodiments, the housing 500 may enclose many different combinations of player tracking devices. For instance, additional gaming devices, such as biometric devices and bonus buttons, may also be enclosed in the device housing. The display 515, key pad 520 and card reader 525 are mounted within a face plate 530. The face plate includes 1) four mounting holes 512 for the display, 2) four mounting holes for the key pad 518 and 3) two mounting holes for the card reader 525. In addition, a card reader cut-out 535 and mounting holes 524 is included to allow an alternative placement of the card reader.

The dimensions of the device housing 500, (e.g. 505, 508 and 510) are shown in FIGS. 5A and 5C. The device housing 500 is shown as a rectangular box for illustrative purposes only. A shape of the device housing 500 is variable and is not strictly limited to rectangular shapes. Dimensions of the display reader cut-out 516 (e.g. 513 and 514), the card reader cut-out (e.g. 524 and 525) and the key pad cut-out (e.g. 522 and 523) in the face plate 530 are shown in FIG. 5B.

The dimensions and layout of the device housing may be designed to conform to one or more standards to produce a standard device housing. A few examples of these standards are described for illustrative purposes and are not meant to be limiting. For instance, to simplify the packaging of the gaming machine, the shape of the device housing may be constrained to fit within the rectangular dimensions 505, 508 and 510 specifying the rectangular device housing 500. Thus, the shape of the device housing may vary but may not exceed the specified standard dimensions. As another example, the dimensions of the cut-outs for the various player tracking devices and a size, shape and number of the mounting holes for each device may be standardized. An advantage of this standard is that one particular type of particular player tracking device may be exchanged for another particular type of player tracking device such as exchanging one brand of card reader for another brand of card reader. As yet another example, the layout of the device housing may be standardized. For instance, all device housing that are mounted horizontally may use a face plate with cut-outs and mounting holes in a fixed relation to one another such as face plate 530. A standard face plate layout may simplify the design of decorative plates for each gaming machine. As yet another example, a standard connection scheme such as USB may be used for the device housing 500 for communicating with a master gaming controller on a gaming machine. The standards described above relating to dimensions and layout may also apply to the design of logic device housings (not shown) to produce standard logic device housings.

FIG. 5D is a mounting system for attaching a card reader 525 to a device housing 500 of the present invention. The card reader 525 is attached to the mount 554 which is secured with a decorative plate 552 to a decorative plate 550 of LEXAN™ polycarbonate plastic material. Typically, the decorative plate 550 is silk-screened to add a particular graphic design. The attachment means for the card reader 525 may be standardized so that a single attachment means design may be used with many different types of card readers. Attachment means (not shown) are also used to secure the other player tracking devices, such as the display 515 and the key pad 520 to the device housing 500. The attachment means for each of the other player tracking devices may be standardized so that a single attachment

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means design, specific to each type of player tracking device, may be used to secure many different types of each particular player device. A standard attachment means (not shown) may be also employed on the device housing 500 to secure the device housing 500 to a gaming machine. The attachment means for mounting the device housing to the gaming machine may be a standard design (e.g. number and size of mounting holes, size of the mounting bracket) and may be located at a standard location on each device housing.

In the present invention, a design of a device housings, a design of an attachment means such as a bracket to secure the device housing to a gaming machine or a design of a gaming machine may be simplified accessing specifications for player tracking units and player tracking devices for the many different manufacturers of these devices in compiled in a database or some other suitable format. The database may be consulted by a designer to design a particular part on the player tracking unit or the gaming machine. As an example, a designer may consult the database to determine dimensions and mounting requirements for one or more brands of player tracking unit when packaging a gaming machine. In designing a gaming machine to accommodate different types of player tracking units gathering the specifications for each type of player tracking is very time consuming and may be minimized using a player tracking unit design database. In another example, a designer of a player tracking unit may consult the player tracking design database to determine housing dimensions for a player tracking unit designed for a particular type of gaming machine.

Turning to FIG. 6, a video gaming machine 2 of the present invention is shown. Machine 2 includes a main cabinet 4, which generally surrounds the machine interior (not shown) and is viewable by users. The main cabinet includes a main door 8 on the front of the machine, which opens to provide access to the interior of the machine. Attached to the main door are player-input switches or buttons 32, a coin acceptor 28, and a bill validator 30, a coin tray 38, and belly glass 40. Viewable through the main door is a video display monitor 34 and an information panel 36. The display monitor 34 will typically be a cathode ray tube, high resolution flat-panel LCD, or other conventional electronically controlled video monitor. The information panel 36 may be a back-lit, silk screened glass panel with lettering to indicate general game information including, for example, the number of coins played. The bill validator 30, player-input switches 32, video display monitor 34, and information panel are devices used to play a game on the game machine 2. The devices are controlled by circuitry (see FIG. 2) housed inside the main cabinet 4 of the machine 2. Many possible games, including traditional slot games, video slot games, video poker, and keno, may be provided with gaming machines of this invention.

The gaming machine 2 includes a top box 6, which sits on top of the main cabinet 4. The top box 6 houses a number of devices, which may be used to add features to a game being played on the gaming machine 2, including speakers 10, 12, 14, a ticket printer 18 which prints bar-coded tickets 20, a key pad 22 for entering player tracking information, a fluorescent display 16 for displaying player tracking information and a card reader 24 for entering a magnetic striped card or smart card containing player tracking information. Further, the top box 6 may house different or additional devices than shown in the FIG. 6. For example, the top box may contain a bonus wheel or a back-lit silk screened panel which may be used to add bonus features to the game being

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played on the gaming machine. During a game, these devices are controlled and powered, in part, by circuitry (see FIG. 2) housed within the main cabinet 4 of the machine 2.

Understand that gaming machine 2 is but one example from a wide range of gaming machine designs on which the present invention may be implemented. For example, not all suitable gaming machines have top boxes or player tracking features. Further, some gaming machines have two or more game displays—mechanical and/or video. And, some gaming machines are designed for bar tables and have displays that face upwards. Those of skill in the art will understand that the present invention, as described below, can be deployed on most any gaming machine now available or hereafter developed.

Returning to the example of FIG. 6, when a user wishes to play the gaming machine 2, he or she inserts cash through the coin acceptor 28 or bill validator 30. Additionally, the bill validator may accept a printed ticket voucher which may be accepted by the bill validator 30 as an indicia of credit. During the game, the player typically views game information and game play using the video display 34.

Prior to initiating game play on the gaming machine, the player may enter playing tracking information using the card reader 24, the keypad 22, and the fluorescent display 16 which may be contained in a player tracking unit as previously described with reference to FIGS. 2-4 and 5A-5D. As another example, the player may enter playing tracking information using the card reader 24 and the video display 34 where the video display may be used as a touch screen to enter information. When the video display 34 is used as a touch screen to enter and display player tracking information, the key pad 22 and fluorescent display 16 may be eliminated from the gaming machine.

During the course of a game, a player may be required to make a number of decisions, which affect the outcome of the game. For example, a player may vary his or her wager on a particular game, select a prize for a particular game, or make game decisions which affect the outcome of a particular game. The player may make these choices using the player-input switches 32, the video display screen 34 or using some other device which enables a player to input information into the gaming machine. Certain player choices may be captured by player tracking software loaded in a memory inside of the gaming machine. For example, the rate at which a player plays a game or the amount a player bets on each game may be captured by the player tracking software.

During certain game events, the gaming machine 2 may display visual and auditory effects that can be perceived by the player. These effects add to the excitement of a game, which makes a player more likely to continue playing. Auditory effects include various sounds that are projected by the speakers 10, 12, 14. Visual effects include flashing lights, strobing lights or other patterns displayed from lights on the gaming machine 2 or from lights behind the belly glass 40. After the player has completed a game, the player may receive game tokens from the coin tray 38 or the ticket 20 from the printer 18, which may be used for further games or to redeem a prize. Further, the player may receive a ticket 20 for food, merchandise, or games from the printer 18. The type of ticket 20 may be related to past game playing recorded by the player tracking software within the gaming machine 2. In some embodiments, these tickets may be used by a game player to obtain game services.

FIG. 7 is a flow chart depicting a method for initializing a gaming machine with a player tracking unit of the present

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invention. In 700, the player tracking unit is powered-up. In 705, the player tracking unit establishes communications with a player tracking server using an initial communication protocol of some type. In 707, the player tracking server type is determined by the player tracking unit. The player tracking server type may be contained in a message sent from the player tracking server to the player tracking unit. The player tracking server type may be used by the player tracking unit to configure itself to communicate properly with the particular type of player tracking server and send player tracking information and game usage information to the player tracking server in an appropriate format. In 710, the player tracking unit loads a communication protocol configured for communicating with the player tracking server type. Also, the player tracking unit may configure itself in any other ways necessary for operating with the player tracking server of the particular type identified in 707 such as loading player tracking application software supported by the player tracking server type. In some embodiments, the player tracking server type may be included in a configuration file stored in a memory on the player tracking unit or the gaming machine. In this embodiment, the player tracking unit may access the configuration file, determine the player tracking server type and configure itself for operating with the player tracking server type prior establishing communications with the player tracking server in 705.

In 715, the player tracking unit establishes communication with a master gaming controller on the gaming machine using an initial communication protocol of some type. In 717, the player tracking unit determines the gaming machine type. In 720, the player tracking unit configures itself to communicate in a communication format used by a master gaming controller on the gaming machine such as USB or RS-232. In 721, the player tracking unit may determine which player tracking functions are to be executed by the player tracking unit. As described above, the player tracking functions may be distributed between logic devices located on the player tracking unit, located on the gaming machine or other gaming devices. For example, the master gaming controller may send game usage information directly to the player tracking server. In this example, the player tracking unit may not poll the gaming machine for game usage information because this player tracking function is performed by the gaming machine. In 722, the player tracking unit loads player tracking software necessary to perform the player tracking functions determined in 721. In some embodiments, the gaming machine type and player tracking functions may be included in a configuration file stored in a memory on the player tracking unit. In this embodiment, the player tracking unit may read the configuration file, determine the gaming machine type and player tracking functions and configure itself for operating with the gaming machine type and player tracking functions prior to establishing communications with the gaming machine in 715.

In 725 and 727, the player tracking unit may optionally establish communications with each of the player tracking peripheral devices using an initial communication protocol such as USB and determine the peripheral device types. For instance, the peripheral device type may be a card reader by a particular manufacturer. In 730, the player tracking unit may load peripheral device drivers for each type of player tracking peripheral device. Some of the peripheral devices on the player tracking unit may be operated by a master gaming controller on a gaming machine. Thus, the player tracking unit may load appropriate software allowing the master gaming controller to operate the player tracking peripheral devices (e.g., gaming devices enclosed in the

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player tracking unit). In 735, the player tracking unit may initiate the player tracking functions determined in 721 such as collecting game usage information from the gaming machine or communicating with a player tracking server.

FIG. 8 is a flow chart depicting a method for designing and producing a player tracking unit for installation in a gaming machine 800. In 805, one or more components to be included in the player tracking unit are identified. For example, one or more components may be selected from the group consisting of player tracking devices such as a card reader, a display, a finger print device, a key pad, a bonus button and a logic device. In 810, one or more housings are defined for the player tracking unit. For instance, a shape for a device housing and a logic device housing may be defined. The shape of the housings may conform to one or more dimensional standards as described with reference to FIGS. 5A-5D. In 815, an arrangement of components with respect to one another within a particular housing is defined. The arrangement of the components and the components dimensions may conform to one or more layout standards. In 820, the player tracking unit having the defined housing and one or more components is produced. The manufactured player tracking unit may be an after-market device for use in a pre-existing gaming machine.

A design method for the player tracking unit may comprise: 1) selecting a gaming machine type such as a brand from a particular manufacturer, 2) selecting one or more peripheral device types such as card readers, displays, etc., 3) consulting a table of standard dimensions and a table of standard layouts types for designing one or more housings that conform to the gaming machine type and the peripheral device types, 4) selecting housing dimensions and a layout type for said housing, 5) consulting a table of standard dimensions and standard attachment means for mounting each peripheral device type to the housing and 6) selecting a standard dimension and standard dimension and standard attachment means for each peripheral device type. To design a logic device housing, a table of standard dimensions and a standard layout types may be consulted and a logic device housing dimensions may be selected from the table. Tables with the various dimensions and layouts may stored in an electronic database as described with reference to FIG. 5. The database may be implemented on a computer system as part of CAD/CAM system. The database may store CAD/CAM representations of each component and gaming machine components that may be selected and inserted into a CAD/CAM design of a player tracking unit and a gaming machine. The CAD/CAM system may aid in packaging and layout design for the player tracking unit and the gaming machine.

FIG. 9 is a flow chart depicting a method of configuring a player tracking unit from a remote server. In 900, the player tracking unit is powered-up. The player tracking unit may be a logic device located in a hardware unit attached to a gaming machine, a master gaming controller designed or configured to execute player tracking functions or combinations thereof. In 905, a logic device performing player tracking functions loads an initial set of player tracking software. The initial set of player tracking software may include but is not limited to software that allows the logic device to perform a generic set of player tracking functions and communication software that allows the player tracking unit to contact a remote server such as a player tracking/accounting server or a player tracking software server. In 910, the logic device establishes a communication connection with the remote server. For instance, a boot protocol, available with a TCP/IP communication may be used to

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establish connections with the remote server. In 920, the logic device may download player tracking software from the remote server. The player tracking software may include but is not limited to 1) one or more device drivers, 2) one or more communication protocols (e.g. player tracking communication protocols), 3) one or more player tracking applications and 4) one or more player tracking settings. As an example, the player tracking communication protocol may be described in a generic communication protocol such as a mark-up language or a proprietary communication protocol used by a particular player tracking server. In 930, the logic device may load the player tracking software downloaded from the remote server and configure itself with any player tracking settings received from the remote server. In 940, the logic device may begin player tracking operations.

One advantage of downloading player tracking software from a remote server is that it may reduce memory requirements on the player tracking unit. For instance, a player tracking unit storing communication protocols and device drivers for a large number of devices may require more memory than a player tracking unit that downloads a specified player tracking software configuration from a remote server. In addition, the downloading of player tracking software from a remote server may simplify the process of upgrading player tracking software on a player tracking device in communication with the remote server.

Although the foregoing invention has been described in some detail for purposes of clarity of understanding, it will be apparent that certain changes and modifications may be practiced within the scope of the appended claims. For instance, while the player tracking units of this invention have been depicted as having rectangular enclosures, the use of player tracking units in accordance with this invention is not so limited. For example, player tracking units may be provided with enclosures including one or more partially curved surfaces.

What is claimed is:

1. A player tracking unit comprising:  
one or more of the following peripheral devices: a card reader, a display, a key pad, a bonus button, a sound device and a biometric input device;  
a logic device designed or configured 1) to collect player tracking information from the peripheral devices, 2) to collect gaming information from a master gaming controller that controls a game played on a gaming machine and 3) to send the player tracking information and accounting information to a player tracking server; and a memory arranged to store a plurality of different communication protocols allowing the logic device to communicate with a plurality of different types of gaming machines using different communication protocols to communicate with the player tracking unit and a plurality of different types of player tracking servers using different communication protocols to communicate with the player tracking unit; and  
a standard housing for the player tracking unit, enclosing the logic device and the peripheral devices, designed or configured to fit in one of a plurality of different types of gaming machines wherein the standard housing conforms to at least one of standard dimensions and a standard layout of the peripheral devices.
2. The player tracking unit of claim 1, further comprising: a memory arranged to store a plurality of device drivers for each type of peripheral device.
3. The player tracking unit of claim 1, further comprising: a standard mounting means designed or configured to mount one of a plurality of different types of card readers in the player tracking unit.

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4. The player tracking unit of claim 1, further comprising: a standard mounting means designed or configured to mount one of a plurality of different types of displays in the player tracking unit.
5. The player tracking unit of claim 1, further comprising: a standard mounting means designed or configured to mount one of a plurality of different types of key pads in the player tracking unit.
6. The player tracking unit of claim 1, further comprising: a standard device housing, enclosing the one or more peripheral devices and separate from a housing enclosing the logic device, designed or configured to fit in one of a plurality of different types of gaming machines wherein the standard housing conforms to at least one of standard dimensions and a standard layout of the peripheral devices.
7. The player tracking unit of claim 1, further comprising: a standard logic device housing, enclosing the logic device and separate from a housing enclosing the one or more peripheral devices, designed or configured to fit in one of a plurality of different types of gaming machines.
8. The player tracking unit of claim 1, further comprising: a network interface.
9. The player tracking unit of claim 1, wherein the network interface is a wireless interface or a wired interface.
10. The player tracking unit of claim 1, further comprising:  
a firewall.
11. The player tracking unit of claim 1, further comprising:  
a peripheral communications connection.
12. The player tracking unit of claim 11, wherein the logic device is designed or configured to communicate with the master gaming controller via the peripheral communication connection using a standard communication protocol.
13. The player tracking unit of claim 12, wherein the standard communication protocol is USB.
14. The player tracking unit of claim 11, further comprising:  
a hub connected to the peripheral communications connection and containing a plurality of peripheral communications connections.
15. The player tracking unit of claim 1, wherein the logic device may be designed or configured to receive from the master gaming controller operation instructions for one or more peripheral devices.
16. The player tracking unit of claim 1, wherein the card reader is designed or configured to read a smart card or write to the smart card.
17. The player tracking unit of claim 1, wherein the biometric input device is a finger print device.
18. The player tracking unit of claim 1, wherein the logic device is a microcontroller or a microprocessor.
19. The player tracking unit of claim 1, wherein the logic device is designed or configured to send information to a peripheral device.
20. The player tracking unit of claim 1, wherein the memory is selected from the group consisting of a flash memory, a hard drive, a CD/DVD.
21. The player tracking unit of claim 1, wherein the logic device is designed or configured to employ one or more application program interfaces.
22. The player tracking unit of claim 21, wherein the one or more application program interfaces are described using a mark-up language.

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23. The player tracking unit of claim 22, wherein the mark-up language is selected from the group consisting of a hyper text mark-up language, an extensible markup language, a wireless mark-up language, and a hand-held device markup language.

24. A gaming machine comprising:

- a master gaming controller designed or configured to control one or more games on the gaming machine; and a player tracking unit comprising:
  - one or more of the following peripheral devices: a card reader, a display, a key pad, a bonus button and a biometric input device;
  - a logic device, separate from the master gaming controller, designed or configured to collect player tracking information from the peripheral devices and to collect accounting information from a master gaming controller on a gaming machine and send the player tracking information and the accounting information to a player tracking server; and
  - a memory arranged to store a plurality of different communication protocols allowing the logic device to communicate with a plurality of different types of gaming machines using different communication protocols to communicate with the player tracking unit and a plurality of different types of player tracking servers using different communication protocols to communicate with the player tracking unit; and
  - a standard logic device housing, enclosing the logic device and separate from a housing adapted for coupling the one or more peripheral devices to the gaming machine, designed or configured to fit in one of a plurality of different types of gaming machines.

25. The gaming machine of claim 24, wherein the game is a video bingo game, a video lottery game, a video blackjack game, a video slot game, a mechanical slot game, a video poker game, a video keno game, a video pachinko game, a video game of chance and a video card game.

26. The gaming machine of claim 24, wherein the gaming machine includes mounting means designed to mount a player tracking unit enclosed in a standard housing.

27. The gaming machine of claim 24, wherein the master gaming controller includes a memory arranged to store software that allows the master gaming controller to detect gaming events on the one or more peripheral devices.

28. The gaming machine of claim 24, further comprising: a peripheral communication connection.

29. The gaming machine of claim 28, wherein the master gaming controller includes a memory arranged to store software for a communication protocol that allows communication with the player tracking unit via the peripheral communication connection.

30. The gaming machine of claim 29, wherein the communication protocol is USB.

31. The gaming machine of claim 24, wherein the logic device on said player tracking unit is designed or configured to receive instructions from the master gaming controller controlling the operation of one or more of said peripheral devices.

32. The gaming machine of claim 24, wherein the master gaming controller executes player tracking software allowing the master gaming controller to perform one or more player tracking functions.

33. The gaming machine of claim 24, wherein the logic device on said player tracking unit is designed or configured to send information to one or more of said peripheral devices.

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34. The gaming machine of claim 24, wherein the logic device on said player tracking unit is designed or configured to send operating instructions to one or more of said peripheral devices.

35. The gaming machine of claim 24, wherein the logic device is designed or configured to employ one or more application program interfaces.

36. The gaming machine of claim 35, wherein the one or more application program interfaces are described using a mark-up language.

37. The gaming machine of claim 36, wherein the mark-up language is selected from the group consisting of a hyper text mark-up language, an extensible markup language, a wireless mark-up language, and a hand-held device markup language.

38. The gaming machine of claim 24, wherein the master gaming controller is designed or configured to employ one or more application program interfaces.

39. The gaming machine of claim 38, wherein the one or more application program interfaces are described using a mark-up language.

40. The gaming machine of claim 39, wherein the mark-up language is selected from the group consisting of a hyper text mark-up language, an extensible markup language, a wireless mark-up language, and a hand-held device markup language.

41. A player tracking gaming peripheral comprising:

- a peripheral communication connection;
- a peripheral controller configured or designed to control communications with a master gaming controller that controls a game played on a gaming machine and to receive instructions from the master gaming controller for one or more of the following peripheral devices: a card reader, a display, a key pad, a bonus button and a biometric input device wherein the instructions from the master gaming controller allow the player tracking gaming peripheral to operate on player tracking events; and

a standard housing for the player tracking gaming peripheral designed or configured to fit in one of a plurality of different types of gaming machines wherein the standard housing conforms to at least one of standard dimensions and a standard layout of the one or more peripheral devices.

42. The player tracking gaming peripheral of claim 41, further comprising:

- a peripheral interface that directly connects to the one or more peripheral devices.

43. The player tracking gaming peripheral of claim 41, further comprising:

- a hub connected to the peripheral communications connection and containing a plurality of peripheral communications connections.

44. The player tracking gaming peripheral of claim 41, wherein the peripheral controller includes a control microprocessor, separate from the master gaming controller, designed or configured to communicate over the peripheral communications connection.

45. The player tracking gaming peripheral of claim 41, wherein the peripheral controller includes a non-volatile memory arranged to store at least one of a) configuration parameters specific to the player tracking gaming peripheral and b) state history information of the player tracking gaming peripheral.

46. The player tracking gaming peripheral of claim 41, wherein the peripheral controller includes a non-volatile memory arranged to store operating code for the gaming peripheral.

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47. The player tracking gaming peripheral of claim 41, wherein the peripheral controller includes a memory arranged to store a plurality of device drivers for each type of peripheral device.

48. The player tracking gaming peripheral of claim 41, wherein the peripheral controller includes a memory arranged to store software for a communication protocol that allows communication with the master gaming controller.

49. The player tracking gaming peripheral of claim 41, wherein the communication protocol is USB.

50. The player tracking gaming peripheral of claim 41, wherein the card reader is designed or configured to read a smart card or write to the smart card.

51. The player tracking gaming peripheral of claim 41, wherein the biometric input device is a finger print device.

52. The player tracking gaming peripheral of claim 41, further comprising:

- a standard mounting means designed or configured to mount one of a plurality of different types of card readers in the player tracking gaming peripheral.

53. The player tracking gaming peripheral of claim 41, further comprising:

- a standard mounting means designed or configured to mount one of a plurality of different types of displays in the player tracking gaming peripheral.

54. The player tracking gaming peripheral of claim 41, further comprising:

- a standard mounting means designed or configured to mount one of a plurality of different types of key pads in the player tracking gaming peripheral.

55. The player tracking gaming peripheral of claim 41, wherein the peripheral controller is designed or configured to employ one or more application program interfaces.

56. The player tracking gaming peripheral of claim 55, wherein the one or more application program interfaces are described using a mark-up language.

57. The player tracking gaming peripheral of claim 56, wherein the mark-up language is selected from the group consisting of a hyper text mark-up language, an extensible markup language, a wireless mark-up language, and a hand-held device markup language.

58. A gaming machine comprising:

- a master gaming controller designed or configured to control one or more games on the gaming machine;
- a network interface for communicating with a player tracking server; and

- a player tracking gaming peripheral, the player tracking gaming peripheral comprising:

- a peripheral communication connection;
  - a peripheral controller configured or designed to control communications with the master gaming controller and to receive instructions from the master gaming controller for one or more of the following peripheral devices: a card reader, a display, a key pad, a bonus button and a biometric input device wherein the instructions from the master gaming controller allow the player tracking gaming peripheral to operate on player tracking events; and

- a standard housing for the player tracking gaming peripheral designed or configured to fit in one of a plurality of different types of gaming machines wherein the standard housing conforms to at least one of standard dimensions and a standard layout of the one or more peripheral devices.

59. The gaming machine of claim 58, wherein the gaming machine wherein the game is a video bingo game, a video

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lottery game, a video black jack game, a video slot game, a mechanical slot game, a video poker game, a video keno game, a video pachinko game, a video game of chance and a video card game.

60. The gaming machine of claim 58, wherein the master gaming controller includes a memory arranged to store software for a standard device identification protocol for the player tracking gaming peripheral and the one or more peripheral devices.

61. The gaming machine of claim 58, wherein the master gaming controller includes a memory arranged to store a plurality of device drivers for at least some of each different type of peripheral device.

62. The gaming machine of claim 58, wherein the master gaming controller is designed or configured to send player tracking information and accounting information using the network interface to the player tracking server.

63. The gaming machine of claim 58, wherein the master gaming controller is designed or configured to receive player tracking information from the player tracking server using the network interface.

64. The gaming machine of claim 58, wherein the network interface is a wireless interface or a wired interface.

65. The gaming machine of claim 58, wherein the master gaming controller includes a memory arranged to store software that allows the master gaming controller to detect gaming events on the one or more peripheral devices.

66. The gaming machine of claim 65, wherein the gaming event is a player tracking event.

67. The gaming machine of claim 58, wherein the master gaming controller includes a memory arranged to store software for a communication protocol that allows communication with the player tracking gaming peripheral via the peripheral communication connection.

68. The gaming machine of claim 67, wherein the communication protocol is USB.

69. The gaming machine of claim 58, wherein the player tracking gaming peripheral is designed or configured to receive high-level instructions from the master gaming controller that do not specify precise control of the operation for one or more of said peripheral devices and wherein the peripheral controller provides low-level instructions, following the high-level instructions, precisely controlling the operation of one or more of said peripheral devices.

70. The gaming machine of claim 58, wherein the master gaming controller includes a memory arranged to store a plurality of different types of communication protocols allowing the gaming machine to communicate with a plurality of different types of player tracking servers using different communication protocols to communicate with the gaming machine.

71. The gaming machine of claim 70, wherein the mark-up language is selected from the group consisting of hyper text mark-up language, extensible markup language, wireless mark-up language, and hand-held device markup language.

72. The gaming machine of claim 58, wherein the gaming machine includes mounting means designed to mount a player tracking gaming peripheral enclosed in a standard housing.

73. The gaming machine of claim 58, wherein the peripheral controller is designed or configured to employ one or more application program interfaces.

74. The gaming machine of claim 73, wherein the one or more application program interfaces are described using a mark-up language.

75. The gaming machine of claim 58, wherein the master gaming controller is designed or configured to employ one or more application program interfaces.

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76. The gaming machine of claim 75, wherein the one or more application program interfaces are described using a mark-up language.

77. The gaming machine of claim 76, wherein the mark-up language is selected from the group consisting of hyper text mark-up language, extensible markup language, wireless mark-up language, and hand-held device markup language.

78. The gaming machine of claim 58, wherein the peripheral controller includes a memory arranged to store a plurality of different types of communication protocols allowing the gaming machine to communicate with a plurality of different types of player tracking servers using different communication protocols to communicate with the gaming machine.

79. The gaming machine of claim 58, wherein the peripheral controller is designed or configured to send player tracking information and accounting information using the network interface to the player tracking server.

80. The gaming machine of claim 58, wherein the peripheral controller is designed or configured to receive player tracking information from the player tracking server using the network interface.

81. The gaming machine of claim 58, wherein the peripheral controller and the master gaming controller are designed or configured to execute one or more essentially identical player tracking software applications.

82. A player tracking unit comprising:  
 one or more of the following peripheral devices: a card reader, a display, a key pad, a bonus button, a sound device and a biometric input device;  
 a logic device designed or configured 1) to collect player tracking information from the peripheral devices, 2) to collect gaming information from a master gaming controller that controls a game played on a gaming machine and 3) to send the player tracking information and accounting information to a player tracking server;  
 a memory arranged to store a plurality of different communication protocols allowing the logic device to communicate with a plurality of different types of gaming machines using different communication protocols to communicate with the player tracking unit and a plurality of different types of player tracking servers using different communication protocols to communicate with the player tracking unit; and  
 a standard logic device housing, enclosing the logic device and separate from a housing adapted for coupling the one or more peripheral devices to the gaming machine, designed or configured to fit in one of a plurality of different types of gaming machines.

83. The player tracking unit of claim 82, further comprising:

a standard housing for the player tracking unit, enclosing the logic device and the peripheral devices, designed or configured to fit in one of a plurality of different types of gaming machines wherein the standard housing conforms to at least one of standard dimensions and a standard layout of the peripheral devices.

84. The player tracking unit of claim 82, further comprising:

a standard mounting means designed or configured to mount one of a plurality of different types of card readers in the player tracking unit.

85. The player tracking unit of claim 82, further comprising:

a standard mounting means designed or configured to mount one of a plurality of different types of displays in the player tracking unit.

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86. The player tracking unit of claim 82, further comprising:

a standard mounting means designed or configured to mount one of a plurality of different types of key pads in the player tracking unit.

87. The player tracking unit of claim 82, further comprising:

a standard device housing, enclosing the one or more peripheral devices and separate from a housing enclosing the logic device, designed or configured to fit in one of a plurality of different types of gaming machines wherein the standard housing conforms to at least one of standard dimensions and a standard layout of the peripheral devices.

88. The player tracking unit of claim 82, further comprising:

a standard logic device housing, enclosing the logic device and separate from a housing enclosing the one or more peripheral devices, designed or configured to fit in one of a plurality of different types of gaming machines.

89. The player tracking unit of claim 82, further comprising:

a network interface.

90. The player tracking unit of claim 82, wherein the network interface is a wireless interface or a wired interface.

91. The player tracking unit of claim 82, further comprising:

a firewall.

92. The player tracking unit of claim 82, further comprising:

a peripheral communications connection.

93. The player tracking unit of claim 92, wherein the logic device is designed or configured to communicate with the master gaming controller via the peripheral communication connection using a standard communication protocol.

94. The player tracking unit of claim 93, wherein the standard communication protocol is USB.

95. The player tracking unit of claim 92, further comprising:

a hub connected to the peripheral communications connection and containing a plurality of peripheral communications connections.

96. The player tracking unit of claim 82 wherein the logic device may be designed or configured to receive from the master gaming controller operation instructions for one or more peripheral devices.

97. A player tracking unit comprising:

one or more of the following peripheral devices: a card reader, a display, a key pad, a bonus button, a sound device and a biometric input device;

a logic device designed or configured 1) to collect player tracking information from the peripheral devices, 2) to collect gaming information from a master gaming controller that controls a game played on a gaming machine and 3) to send the player tracking information and accounting information to a player tracking server;

a memory arranged to store a plurality of different communication protocols allowing the logic device to communicate with a plurality of different types of gaming machines using different communication protocols to communicate with the player tracking unit and a plurality of different types of player tracking servers using different communication protocols to communicate with the player tracking unit; and

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a standard device housing, enclosing the one or more peripheral devices and separate from a housing enclosing the logic device, designed or configured to fit in one of a plurality of different types of gaming machines wherein the standard housing conforms to at least one of standard dimensions and a standard layout of the peripheral devices.

98. The player tracking unit of claim 97, further comprising:

a standard housing for the player tracking unit, enclosing the logic device and the peripheral devices, designed or configured to fit in one of a plurality of different types of gaming machines wherein the standard housing conforms to at least one of standard dimensions and a standard layout of the peripheral devices.

99. The player tracking unit of claim 97, further comprising:

a standard mounting means designed or configured to mount one of a plurality of different types of card readers in the player tracking unit.

100. The player tracking unit of claim 97, further comprising:

a standard mounting means designed or configured to mount one of a plurality of different types of displays in the player tracking unit.

101. The player tracking unit of claim 97, further comprising:

a standard mounting means designed or configured to mount one of a plurality of different types of key pads in the player tracking unit.

102. The player tracking unit of claim 97, further comprising:

a standard logic device housing, enclosing the logic device and separate from a housing enclosing the one or more peripheral devices, designed or configured to fit in one of a plurality of different types of gaming machines.

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103. The player tracking unit of claim 97, further comprising:

a standard logic device housing, enclosing the logic device and separate from a housing enclosing the one or more peripheral devices, designed or configured to fit in one of a plurality of different types of gaming machines.

104. The player tracking unit of claim 97, further comprising:

a network interface.

105. The player tracking unit of claim 97, wherein the network interface is a wireless interface or a wired interface.

106. The player tracking unit of claim 97, further comprising:

a firewall.

107. The player tracking unit of claim 97, further comprising:

a peripheral communications connection.

108. The player tracking unit of claim 107, wherein the logic device is designed or configured to communicate with the master gaming controller via the peripheral communication connection using a standard communication protocol.

109. The player tracking unit of claim 108, wherein the standard communication protocol is USB.

110. The player tracking unit of claim 107, further comprising:

a hub connected to the peripheral communications connection and containing a plurality of peripheral communications connections.

111. The player tracking unit of claim 97, wherein the logic device may be designed or configured to receive from the master gaming controller operation instructions for one or more peripheral devices.

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